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SOME CHARACTERISTICS OF FARM AND HOME PROPRIETORS.

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The paper here presented contains conclusions that have only recently been made possible, and most of these have a broad statistical foundation composed of facts derived from nearly 63,000,000 of people. They are, therefore, subjects for explanation rather than for dispute.

At the outset it must be borne in mind that the word "home" is used in a sense that does not include a farm. It applies to homes that are not farmers' homes. This distinction is made in order to set off the agricultural proprietors by themselves, since their conditions are very different from those surrounding urban home proprietors. I ought to say, also, that the word "proprietors" is used as including tenants as well as owners, and not as signifying owners merely.

Nearly one-tenth of the population is composed of the persons who own the farms and homes that they occupy, and the last census now makes it possible to say how old they are, to what race and sex they belong, where they were born, and even where their parents were born. The interest in this class of individuals increases when it is observed what

is implied in the fact of farm or home ownership. They are substantially the land owners of the country. If a man owns land it is at least that on which he lives. A farmer does not let his farm to a tenant and hire a farm to cultivate himself; nor does one own another's home and hire his own. The merchant who owns his store most likely owns his home; and, as a rule, investors in real estate have first invested in a home for themselves. The exceptions to the rule, it is believed, are not sufficient to invalidate the assertion that the farm and home owners are substantially the land owners. They are more than these; they include the owners of substantially all of the wealth. While it is true that in cities there are small tradesmen and other persons possessing some wealth, who do not own their homes, their aggregate wealth is of much less importance than their number, and can have but a small place among many billions of dollars.

Another implication is that the farm and home owners constitute the more especially conservative element of society, leaving sex out of consideration. A home or farm buyer feels fairly well "settled" and wishes to remain so; his interest in local affairs increases, and he dreads radical changes if he prospers.

Let us now see how the races compare with respect to the ownership of their habitations, the facts being taken for 1890. The negroes of the South have had about 25 years, and those of the North a life time, in which to become the owners of farms, and yet only 21 per cent of the negro farm proprietors are owners in contrast with 72 per cent for the whites. Of the farm proprietors of mixed blood 29 per cent are owners; of the Indians 79 per cent; and of the Chinese and Japanese 10 per cent. The high percentage for the Indians is mostly explained by the allotment law, which prevents the alienation of their land for a period of years.

The negroes have done better in the Rocky Mountain and Pacific regions than elsewhere, the farm owners being 77 per

cent of the farm proprietors. Next in order are the North Atlantic States with 58 per cent, the North Central States with 52 per cent, the South Atlantic States with only 23 per cent, and, lowest of all, the South Central States with 18 per cent.

The negroes have been more successful in acquiring the ownership of farms among the high-priced acres of the East than among the low-priced acres of the South. For $100 in the latter region a negro can buy land sufficient to support himself and family, and he can have "a log rolling" and build his house himself. His mule and implements would cost $60 more. It is not entirely fair, however, to condemn the negro on the evidence of these prices, because they were about twice as great from 1875 to 1880, which may be regarded as representing the average of the 25 years since the end of the war; but, nevertheless, a small farm seems to have been, and still seems to be, above the negro's means. He need not have advanced the money for the purchase, but could have paid in installments. This, indeed, he has tried to do in many cases but failed after continuing for a year or so. An illustration given to me by a Mississippi cotton planter represents a common occurrence in the South. This planter wished to keep some of the better negroes of the neighborhood from straying away, as they are all inclined to do, in order that they might be available for doing work on his plantation every year; so he sold to each of these negroes a small piece of land without receiving any cash payment, but with the understanding that the price should be paid in periodical installments, and that a deed should be given at the time of the last payment called for by the contract. The negroes kept up the payments for varying lengths of time, but none of them made all of the payments, although the terms were easy and well within their ability.

The trouble with the negro of this class is that he fools away too much of his time; he is a gad-about; he likes to loaf at the cross-roads store or in the village street, and he

will go into debt to any extent that he can find credit. In the cotton country his landlord or some merchant advances his keeping while the crop is maturing, and he is most of the time living on the future.

Although conspicuous savers of wealth are found among the negroes, the masses of them are not saving in their disposition. In Georgia and Virginia the assessed valuation of the property owned by the negroes is known. If allowance be made for undervaluation, as authorized by the census, the estimated true value of their taxable property was $34 per capita in 1890. Upon multiplying this number by the number of negroes in the United States the estimated true value of their taxed wealth becomes $253,981,360, without deducting the debts that they owe, and this amount is only 0.39 of 1 per cent of the wealth of the whole country, while their population was 12 per cent of the entire population. It would seem, therefore, that a generation has been sufficient for the negroes to acquire the ownership of farms probably nearly to the extent to which their instincts prompt them to do so.

Although the negro has been less successful in becoming a home owner than a farm owner, yet, relative to the success of the whites, he has been more successful; that is, he approaches the white ownership of homes more closely than he does their farm ownership. Of the white home proprietors 39 per cent are owners; of the negro home proprietors, 15 per cent; of those of mixed blood, 23 per cent; of the Indian proprietors, 53 per cent; and of the Chinese and Japanese, 14 per cent. Farm and home ownership is everywhere found in a higher degree among persons of mixed white and negro blood than among the negroes, but the degree of ownership is much nearer that of the negroes than that of the whites.

It is in the North Central States that the negroes have done best in home ownership, and there 29 per cent of their home proprietors are owners; next in the Rocky Mountain and Pacific regions, where the percentage is 25; next in the

North Atlantic States, where it is 16; followed by 14 per cent in the South Atlantic and the South Central States.

Incidental to the census inquiry in regard to the proprietors of farms and homes, a discovery was made in regard to the sizes of white and negro families, which has heretofore been a matter of pure conjecture. There are 1,410,769 families having representatives of negro or mixed blood; and the total negro and mixed population is 7,470,040, including those who live in white families as servants. There are, therefore, 5.30 individuals of negro and mixed blood, on the average, to each family of the same race, a number somewhat greater than the actual family, but really the number that the family would contain if the white families had no negro and mixed servants. The white family, not including these servants, has 4.89 individuals, on the average, or only 0.41 of an individual less than the greatest possible negro and mixed family. The white family, including the servants, must be about as large as the actual negro and mixed family; perhaps larger. If there are half a million negro and mixed servants in white families, or one to every 22 white families, the two families, as actually existing, are of the same size.

A country having for a seventh of its population persons who were born in foreign countries, and for a third of its population persons who were born either in foreign countries or of foreign parents, must be interested in finding the seventh and the third provided with a strong conservative element and with such property interests that they would be opposed to exhorbitant taxes. It is of interest, then, to this country to know that the immigrants from Europe brought a "land hunger" with them, which they have gratified to a surprising extent, when they are compared with the natives, and when it is borne in mind that they brought substantially no wealth with them to this country. The Commissioner-General of Immigration reports that all immigrants that arrived during the nine months ended March 31, 1895,

were asked how much money they brought with them, and the average to each individual was $17. Probably the full amounts were not disclosed in all cases, but, nevertheless, the figures are significant of the general fact that the immigrants come here to begin life with practically nothing but their ability to labor upon which to depend. The land hunger of these people has made them the owners of the farms that they cultivate in a much greater degree than the natives are. Of the native white farm proprietors 69 per cent are owners, and the natives of no other prominent country have as low a percentage as this, except the Italians, for whom the percentage is 68.

Bear in mind that the percentage for the native farm owners is 69. Next above the natives of this country are the English Canadians, with farm ownership represented by 80 per cent; and then follow, in order, the Germans, with 81 per cent; the natives of Austria-Hungary, with a fraction over 81 per cent; the natives of England and Wales, with 82 per cent; the French Canadians, with 83 per cent; the French, with 84 per cent; the Russians, with a fraction over 84 per cent; the Scotch, with 84.9 per cent; the natives of Norway, Sweden, and Denmark, with 85 per cent; and, highest of all, the Irish, with 87 per cent. Only 13 Irish farmers in 100 in this country are tenants, in contrast with 31 among the natives. Upon turning to the home proprietors, the contrast between natives and foreigners will be found largely reversed; home ownership is more prevalent among the white natives of the United States than among those of any other country, except the Germans and the natives of Norway, Sweden, and Denmark. These foreigners have carried home owning to the highest point, the Germans to the point of 43 per cent of their home proprietors, and the Scandinavians to the point of 42 per cent.

The percentage for the native home owners is 41; next below are the French, with 36.9 per cent; then the natives of England and Wales, with 36.7 per cent; the Irish, with 36.4

per cent; the Scotch, with 35 per cent; the English Canadians, with a fraction less than 35 per cent; the natives of Austria-Hungary, with 28 per cent; the French Canadians, with 23 per cent; the Russians, with 22 per cent; and, lowest, the Italians, with 12 per cent.

It is evident that in the case of some of the foreigners the farms attract a better element than the towns and cities do. There is a strong contrast between the high farm ownership of the Russians and the French Canadians and their high home tenancy.

The white natives of this country stand high (or above the average) as home owners, but low as farm owners. All foreigners stand high as farm owners, except the Italians; and all stand low as home owners, except the Germans and Scandinavians, but the natives of England and Wales, France, Ireland, and Scotland, and the English natives of Canada and Newfoundland, very nearly reach the average for the native and foreign born combined, and these foreigners, together with the Germans and Scandinavians, constitute three-quarters of the foreign born population. It is, indeed, a remarkable showing that these foreigners have made for themselves, notwithstanding a beginning made in poverty not many years ago. More than half of the immigrants to this country from 1820 to 1890 came here within the last 20 years of the period, and two-thirds of them within the last 30 years.

While due praise should be given to the foreigners for doing as well as they have done in this country, it should not be overlooked that it was this country that offered them the opportunities. Here cheap land has been freely bought with the savings out of comparatively high wages for what has mostly been unskilled labor, and with the aid of a mortgage the foreigner has become the owner of his home, or as a farmer, a "landed proprietor," as he would be called in the United Kingdom. The statistics that are given are enough to show that there is a strong conservative element in our

foreign born population, with the inference that it is distributed more widely than the statistics disclose.

Professor Gunton has recently criticised adversely this inference from the statistics of dwelling ownership, which I made not long ago in a New York newspaper, his objection being that the farms and homes owned by the foreign born are less valuable than those owned by the natives. While, as he claims, this may be so, yet we should not lose sight of the fact that the foreign born have begun at the bottom round of the ladder much more frequently than the native born have, and that a large majority of the immigrants are unskilled laborers and therefore workers for low rates of wages; so that, to them, success in the ownership of cheap farms and homes may have presented obstacles as difficult to be overcome as those that were presented to the native owners of more costly farms and homes. And besides this, Professor Gunton does not take account of the extensive acquisition of farms and homes by natives, by inheritance, which is almost entirely denied to the foreign born.

In the larger cities the foreign born exceed the native born whites in home ownership in proportion to their numbers. The native white home owners in the 58 cities of 50,000 population and over are 23 per cent of all native home proprietors. The foreigners standing below this are the natives of Austria-Hungary, with 22 per cent; the English Canadians, with 20 per cent; the Russians, with 15 per cent; the French Canadians, with 14 per cent; and the Italians, with only 6 per cent; but these do not constitute the principal foreign element of the city population. The great German element has the highest percentage for home ownership, 32 per cent; the Irish have 24 per cent, and also the English; the French, the Scandinavians, and the Scotch are slightly above the natives in home ownership.

Even in the cities of still larger population, the 11 cities of a quarter of a million or more, the foreigners slightly exceed the white natives in this matter, but the fact that they

do so is due to the high degree of ownership among the Germans. These thrifty people, and the Scotch and Scandinavians, are the only foreigners that have a more prevalent ownership than the natives have.

Now let us pass to the native children of the white foreigners, their children born in this country. These children are characteristic of their parents with respect to the ownership of their farms and homes. They own the farms that they cultivate more generally than the white farmers do whose parents were native born, the ownership of the native children of foreign white parents being represented by 71 per cent, and the ownership of the native children of native parents by 69 per cent. The relative positions of the two classes are reversed in the case of home ownership, the percentage for the owners with native parents being 42, and for those with one or both parents foreign born, 34. In the 58 principal cities the percentage for the children of native parents is 25; for those of foreign parents, 22.

In comparing the white persons having native parents with those having foreign parents, with respect to home and farm ownership, it is important to bear in mind that the age composition of the two classes differs; the persons having foreign parents must necessarily be mostly on the younger side of middle life, and hence in the tenancy period of life, while those with native parents are distributed normally throughout all ages. Therefore the proprietors with foreign parents are at a disadvantage in the comparison; yet in spite of this they exceed the other class in farm ownership, and occupy a very creditable place in home ownership.

Let us now turn to the ages of farm and home proprietors. How old must a man be when he is most likely to become the owner of his habitation? This novel question can now be answered, with the proviso of a continuance of the conditions that have led to present home and farm ownership. The statistics show that a man is most likely to become the owner of his habitation within about five to ten years

after the time of life when he is most likely to marry; that is, he is most likely to become an owner at 30 to 34 years of age. The probability is a decreasing one in every succeeding quinquennial age period, with the exception of 55 to 59 years, when the probability is greater than at any time of life after 39 years. In the 58 principal cities the probability that a man will acquire the ownership of his dwelling is greatest when he is 30 to 34 years old, or at the same age as for the whole country, and the probability is less than half as great in the cities in this age period as it is in the country at large.

A woman is most likely to become the owner of the dwelling in which she lives when she is 50 to 54 years of age, and the general fact is that the probability increases throughout her life until she is 54 years old, after which it decreases, hardly perceptibly, to the end of her life. The acquiring of the ownership of the dwelling by women in the 58 principal cities is a greatest probability five years later in life than it is in the whole country.

We are now, also, able to say at what time of life a man is most likely to mortgage his habitation, if he owns it. This is at the age at which he is most likely to acquire its ownership, which, as I have already said, is the age of 30 to 34 years; and we need not be surprised at this when we bear in mind that the mortgaging of the habitation is closely related to its purchase, since a majority of mortgages are made to secure a part of the purchase money. Women acquire the ownership of their habitations mostly by gift and inheritance, rather than by purchase, and they are most likely to do so, subject to mortgage, when they are 40 to 44 years old, while they must be at least 60 years old before they are most likely to acquire ownership free of mortgage.

Men and women differ curiously with respect to becoming or remaining farm and home owners, or the heads of tenant families, after they are 60 years old. The proportion of the men decreases while that of the women increases; that is, in passing through life up to the age of 60 years a larger and

larger share of the male and of the female population is composed of owners and the heads of tenant families. The share keeps on increasing with women after 60 years, but it decreases with men, and the inference is indicated that when a man is left alone in his old age he is much more disposed to give up his old home and to live with a son or daughter than a woman is under similar circumstances.

One of the surprising discoveries of the inquiry into the ages of the proprietors of farms and homes is the large proportion of the owners who are at least 50 and 60 years of age. Of the owners of farms 44 per cent are 50 years old and over, and 23 per cent are at least 60 years old; only two per cent are under 25 years old, and only nine per cent are under 30. Very nearly the same percentages represent the owners of homes.

Upon separating the sexes, the female owners are found to be older than the male, owing, doubtless, to widowhood, by which a larger portion of the female owners have become such. Of the female owners of farms free of mortgage 59 per cent are 50 and over, and 32 per cent are at least 60; two per cent are under 25, and five per cent under 30. The figures for mortgaged farms are somewhat lower than these in the older age periods.

For homes free of mortgage, the female owners who are at least 50 years old are 61 per cent of all female owners of free homes, and those who are at least 60 are 37 per cent; for incumbered homes the corresponding proportions are much smaller.

Almost one-half of the male owners of unmortgaged homes in the 58 principal cities are 50 years old or more, and nearly a quarter are 60 at least. The corresponding fractions for females are more than three-fifths for those who are at least 50 and over, and one-third for those who are at least 60 years old. To see the matter in another light, it may be stated that a male farmer must be 30 to 34 years old before the chances are even that he will or will not own his farm, ten-

ancy having preponderated before this age; and a male home proprietor must be 60 years old or more before the chances become even that he will or will not own his home. A life of 60 years is about twice as long as the average life, and yet a man, who is not a farmer, must live this double duration of the average human existence, and all of the time find himself in a situation where the probability of his owning the roof over his head is against him. It is only after he begins to add years to his three score that he can expect to find the chances in favor of his being the owner of this one of our dearest possessions. In the Southern States the male home proprietor cannot live long enough to find the chances even that he will cease to be a tenant, the negroes being included; and in the 58 principal cities neither male nor female home proprietors can live long enough to find the even chances. This is a rather startling state of affairs, when presented in this way, but it is consonant with the fact that about one-half of the families of the United States do not own the dwellings in which they live. In the younger ages the farm owners, free of mortgage, are more largely represented, relative to their total number, than the free home owners are, but their representation is less than that of the free home owners in the older ages, with the exception of the age period of 55 to 59 years.

A comparison of farms with homes with respect to ownership under incumbrance shows that the home owners are more largely represented than the farm owners are during the first half of a full life, while the contrary is true during the latter half; that is, the younger farm owners are less given to mortgaging than the younger home owners are. Under 30 years of age, and from 35 to 39 years, there is a larger representation of farm tenants than of home tenants, relative to the total number of tenants of each class; but during all other age periods, embracing the age period of 30 to 34 years, and the remainder of life beginning with 40 years, there is a larger representation of home tenants than

of farm tenants. In other words, the latter half of life is the time that is more especially the ownership period with farmers than with home proprietors, while the earlier half of life is more the farm tenancy period than the home tenancy period. A mature and conservative age is the average one of the owners of farms and homes. The male owners of farms are 46 years old, on the average, and the females 51 years; the male owners of homes are 44 years old, and the female owners 51 years. In the 58 principal cities the male owners of homes are 46 years old; the female owners 51 years. Thus it appears that the women are five to seven years older than the men are; that the men who own homes in the cities are two years older than those in the whole country; and that the male owners of homes in the country at large are two years younger than the men are who own farms.

With the statistics at hand it becomes possible to compute the death rate of the farm and home owners, upon the basis of the Massachusetts registration for 1890, which may be regarded as approximately representing the white population. The death rate of each age period is applied to the number of owners of the same age period, and in this way the average death rate of farm and home owners is found to be 25.90 per thousand, the average for the entire population of Massachusetts being 19.44 in 1890. This death rate of 25.90 is virtually the death rate of the wealth owners, since the owners of farms and homes own most of the wealth of the country. The death rate of the male farm and home owners, computed as explained, is 24.76 per thousand; of the female owners, 31.38, or from six to twelve higher than the general death rate.

There are 1,832,903 women in the United States who own the farms and homes that they occupy, 370,480 being farm owners and 1,462,423 home owners. The ownership of farms is divided between the two sexes in the proportion of 90 per cent to men and 10 per cent to women; the ownership of homes 75 per cent to men and 25 per cent to women. That

is to say, slightly more than one-quarter of the 2,923,671 owned homes of this country are owned by women, and about one-tenth of the 3,142,743 owned farms.

It is sometimes possible in statistics to ascertain indirectly without much error what it is practically impossible to ascertain by direct inquiry. The extent to which husbands have given homes to wives no one could find out directly without searching the 3000 real estate record offices in the United States, and by making supplementary inquiries; but there is a short method by which it may be approximately determined. As before stated, it has been ascertained that 10 per cent of the farms that are occupied by owners in the United States are owned by women, and that, of the owned homes, women are the owners of 25 per cent. It is a matter of common observation that farmers, while living, rarely give their farms to their wives, and, if wives and other women inherit homes to about the same extent that they inherit farms, the difference between these two percentages will give the percentage of owned homes that were given to wives. Therefore the conclusion is that 15 per cent, or more than one-seventh, of the total number of owned homes were gifts to wives, and this number is 443,521.

The reason why husbands place the title to the home in their wives' names is, of course, to put it beyond the reach of creditors, not necesssrily to defraud or deceive, but that, in any event, a home may be saved for wife and children, unaffected by their own financial operations. With regard to this practice it is interesting to compare the larger with the smaller cities and the towns. Of the owned homes outside of cities of 50,000 population and over, 16 per cent were gifts to wives; in the 47 cities of 50,000 to 250,000 population, 12 per cent; and in the 11 cities of more than 250,000 population, 11 per cent. As we pass from country to town and from town to small city, and from small city to large one, we find husbands less and less disposed to protect the home from chances of loss. The countryman clutches his property

more tenaciously than the city man does, and he treasures it more carefully.

Several of the discoveries in regard to the proprietors of farms and homes, mentioned in the foregoing, will, I hope, excite discussion. Judgment will be passed upon the negroes, who, had they possessed a tithe of the thrift of the Germans, would all have owned their farms by this time, although they could not have bought the more desirable land in the South, because the planters would not have broken up their plantations. The remarkable success of the foreign born in acquiring the ownership of farms and homes must excite comment in regard to their unexpected conservative disposition. The large hold that women have on the farms and homes of the country, obtained almost entirely by gift and inheritance, is of importance to the creditors of their husbands, and is an unlooked-for distribution of wealth to the extent that it has been carried. Now that there is so much speculation and discussion concerning the distribution of wealth, the unexpectedly high age-rate of the owners of farms and homes will naturally raise the question as to why home-owning is delayed so late in life, whether on account of poverty, or on account of unsettled prospects in life, or something else; and whether tenancy, which is perceptibly increasing in this country, and has already become quite European, is not a necessary outcome of the present industrial organization.

Mr. Podsnap has answered these questions variously, both as an optimist and as a pessimist. The character of the answer very much depends upon how much the inquirer shuts his eyes when he is looking for it. However wealth may be distributed as a matter of fact, it must be considerably concentrated, owing to the individual composition of our society. Persons under 25 years of age are not old enough to have accumulated much property, nor most of them to have inherited it, and these persons are 56 per cent of the population. Women do not accumulate out of their earnings and

enterprises, and their wealth is mostly confined to inheritances and gifts. The female population is 49 per cent of the total population. Then there is the negro population, which is 12 per cent of the total, and which owns only 0.39 of one per cent of the wealth of the country. Therefore by far the chief portion of our wealth must be found among the white males of 25 years of age and over, and they constitute only 25 per cent of the population. How many, or rather how few, of these men would be disposed to accumulate much wealth, if they had abundant opportunities to do so, is a matter of vague conjecture. I venture to say that a very large fraction of them could not, or would not, keep $10,000 each for ten years, if that amount of wealth were given to them. Ability and disposition to keep wealth are required quite as much as ability to get it.

The tenure and values of farms and homes together throw some light on the distribution of wealth. Less than half of the farms of the United States, or 48 per cent, are owned free of debt, the remainder being under mortgage or worked by tenants. Only 27 per cent, or hardly more than one-quarter, of the homes of this country are owned free of mortgage by the families that occupy them, and three-fourths of the homes are mortgaged or are occupied by tenants.

Let us pursue this a step farther and separate the less valuable farms and homes from the more valuable ones. There is a pretty intimate relationship, it is believed, between a person's income and the value of the farm or home that he owns, and, now that we are able to classify the 13,000,000 families of the country with regard to these values, we may reasonably feel that we are getting as close a view of the distribution of wealth as can well be got by indirect statistical means.

The farms and homes that are worth $5000 and over, and are occupied by their owners, number 1,129,859, and it is among the owners of these where we must find most of the wealth of the country. These families are nine per cent of

all families, and here, in this small fraction of our families, is owned the principal portion of our $65,037,091,197 worth of wealth.

If a graduated scheme of distribution be drawn up, it is possible to see how easy it is to place a large majority of any given description of units in the hands of a small minority of owners. Some probate statistics of personal property recently published by the Maryland Bureau of Labor Statistics afford an illustration. During the six years from 1888 to 1893, 39 per cent of the probated estates in Baltimore represented only one per cent of the probated wealth; 62 per cent of the estates represented only five per cent of the wealth; 75 per cent of the estates represented only 10 per cent of the wealth; seven per cent of the estates represented 71 per cent of the wealth; four per cent of the estates represented 59 per cent of the wealth; and two per cent of the estates represented 44 per cent of the wealth.

This is how wealth is distributed among those who die possessing wealth in a great city; for, it is to be remembered, that my computations are concerned only with those persons who have wealth enough at death to be worth the attention of a probate court. If the entire population that died were to be included in the computation, the inequality of this distribution of wealth in Baltimore would be much emphasized.

A much broader basis for an exhibit similar to the foregoing is afforded by probate statistics for Massachusetts. The estates to which I will refer are of those persons who died during the three years, 1889 to 1891, for which inventories were filed in the probate courts of the State. The number of these estates is 14,608, representing wealth valued at $155,558,788, both real and personal property being included. As many as 27 per cent of the estates were worth only one per cent of the total amount of all of the estates, this being the class of those valued at less than $1000 each. The great proportion of 69 per cent of the estates were valued at only 11 per cent of the total amount, and these estates are

those worth less than $5000 each. At the other extreme are the estates worth $50,000 and over, and these are only seven per cent of the total number, while their amount is 65 per cent of the total amount of all the estates.

These facts were taken from the report of the Massachusetts Bureau of Statistics of Labor for 1894. The classification of the amounts of the estates is not sufficiently minute to determine, but it seems likely that not much more than one-half of the persons who die in Massachusetts possessing wealth enough to be distributed through the probate courts are able to own their farms and homes without resorting to the aid of a mortgage. I mean practically able to do so, having regard to their stations in life and their standards of living.

A conspicuous obstacle to the ownership of the home is in the small earnings of labor. Analyze the occupations of men and it will be found that most men do not produce wealth enough to enable them to save much property, if their living is up to the standard of the times, and when that standard is far from being reached there is always a social protest. The cost of a rising standard of living is taking the place of the old-time saving among the masses of the people, and the earnings of labor have not kept pace with the rising standard. There is hardly a limit to possible expenditures, not merely for living, but for our intellectual, moral, emotional, sympathetic, and æsthetic cultivation, compared with which the limit to earnings is very quickly reached.

An effort was made not long ago by some experts in wage statistics in this city to estimate the amount of the earnings of all of the wage earners in the United States for one year, adopting the number ascertained by the census of 1890. The total amount at which they arrived is $4,774,414,590, and the average earnings with which it is computed cannot reasonably be increased to any great extent.

The average earnings for one year adopted for fishermen and oystermen is $225; for miners, $420; for domestic and

personal service, $227; for manufacturing and mechanical pursuits, $445; for trade and transportation, $340; for a group of occupations consisting of lumbermen and raftsmen, quarrymen, stock-raisers and herders, woodchoppers, and various agricultural pursuits, but not including farm laborers, the average of $372 is adopted. The earnings of agricultural laborers have been determined by the Department of Agriculture to be $215. For all wage earners the general average is only $320.

It is quite evident that with such small earnings as these the acquisition of the title to a farm or a home by wage workers of this country, whose number has been carefully estimated to be 14,920,525 out of the 22,735,661 persons having gainful occupations, is a matter of unremitting industry, of great economy, of parsimony even, and of many long years of saving, under what we would call at the present time a low standard of living.

And so now to return to the question that prompted these reflections, I should say that the reason why the ownership of the home, in the majority of cases, is delayed to such a late time of life — almost its time of sundown — is largely on account of both an absolute poverty and a poverty that is relative to land and building values; it is on account of a rising standard of living, of insufficient earnings, and of the uncertainties of the future under a system that makes dependent wage earners out of two-thirds of the workers of the country.

A TRIAL BIBLIOGRAPHY OF THE WRITINGS OF JOHANN PETER SÜSSMILCH, 1707–1767.

By W. F. Willcox and F. S. Crum.

In the first volume of his "Geschichte der Statistik" Professor V. John concludes the extended discussion of Süssmilch's contributions to statistics by saying that he was the first statistician in the present meaning of the term, although, like his English predecessors, he never used the word, the first to show that movements of population depend primarily upon economic causes, and the first to present a systematic, coördinated survey of statistics. To English students of that subject the interest attaching to so important a writer may be heightened by the knowledge that he derived the immediate incentive to his main work from an English book, W. Derham's *Physico-Theology;* that he salutes a remoter intellectual ancestor in England, Captain John Graunt, as the founder of his science, and that his work proved subsequently a storehouse of fact and figures in support of the arguments of Malthus. In every edition of "The Principle of Population" after the first, Süssmilch is cited between forty and fifty times. When one compares with these facts the little attention paid to the German writer by his contemporaries and immediate successors in his native land, it seems no exaggeration to say that his immediate relations to English thought and work were at least as close as to those of Germany.

Like Malthus, Süssmilch was a writer of one book. The great literary work of his life was the writing, revising, extending, and defending *Die Göttliche Ordnung.* The first edition of this work was issued in 1741, and is very rare. Another and apparently an unauthorized edition was issued the year following, of which Professor John speaks, but which he was unable to get. The study of Süssmilch and his relations to Malthus, in connection with which the following bibliography has been prepared, was suggested by the discovery of a copy of this edition of 1742 in the library of the Surgeon-General at Washington, and the purchase for the Cornell university library of the rare pamphlet published in 1756 in which Süssmilch defended his positions against certain criticisms of Von Justi.

As no complete bibliography of Süssmilch's writings has been found in print, an attempt to compile one has been made. All his works, to which reference is made in the accessible bibliographical authorities, were arranged chronologically, and this trial list was sent to over forty leading libraries, mainly in Europe, with a request that it be supplemented by whatever additions the respective libraries might contain. Thanks are due to all the librarians for their prompt and careful replies, and particularly to Professor V. John, of Innsbruck, and Professor R. Boeckh, of Berlin, who, fortunately, were able to furnish a number of additions.

The following bibliography, therefore, may be deemed reasonably complete, but corrections or additions will be gladly received: —

TRIAL BIBLIOGRAPHY OF JOHANN PETER SÜSSMILCH.

A Chronological List of His Printed Works and Manuscript Writings.

Dissertatio de cohaesion et attractione corporum. Jenae, 1732. Lit. Ritterianis. 4to. 39 pp.

Die göttliche Ordnung in den Veränderungen des menschlichen Geschlechts, aus der Geburt, Tod, und Fortpflanzung desselben erwiesen. Berlin, 1741. J. C. Spener. 12mo.

Die göttliche Ordnung in denen Veränderungen des menschlichen Geschlechts, das ist, gründlicher Beweiss der göttlichen Vorsehung und Vorsorge für das menschliche Geschlecht, etc. Berlin, 1742. D. A. Gohls. 12mo.

Das Frolocken der Brandenburgischen Lande über dem glücklich geendigten Kriege. In einer Predigt. Berlin, 1742. 4to.

Die Wichtigkeit einer guten Erziehung, in einer Predigt am ersten Sonntag nach Epiph., 1743, in hiessiger St. Petri Kirche vorgestellet. Berlin, 1743. Christian S. Bergemann. 4to. 8 pp.

Réflexions sur la convenance de la langue celtique et en particulière de la teutonique avec celles de l'orient. Berlin, 1745. Ak. d. Wiss.

Anweisung zum frölichen und Gottgefülligen Lob-Gesang über dem am 4ten Junius, 1745, bey Strigau erhaltenen herrlichen Siege in einer Danck-Predigt am letzten Tage des Pfingst-Festes in der Gemeine zu St. Petri in Cölln vorgestellet. Berlin, 1745. 4to. 24 pp. (Printed with the Henning manuscripts.)

Das unvergessliche Denkmahl der Wunder, so Gott durch die bisherigen siegreichen Unternehmungen Sr. Königl. Majestät von Preussen gestiftet, in der am 4ten Sonntage des Advends 1745 verordneten Dankpredigt der Gemeine zu St. Petri in Cölln über Psalm 3, v. 4 erkläret. Berlin, 1745. 4to. 18 pp.

Die Unvernunft und Bosheit des berüchtigten Edelmann's durch seine schändliche Vorstellung des obrigkeitlichen Amtes, aus seinem "Moses mit verdecktem Angesichte" dargethan, und zu aller Menschen Warnung vor Augen gelegt. Berlin, 1747. 8vo.

Der Brandenburger Patriot oder unparteiische Beurtheilung der errichteten und von Sr. Königl. Majestät in Preussen octroyrten Handlungsgesellschaft. 1751.

Schnelles Wachsthum und Erbauung der königlichen Residenzstadt Berlin: in zweien Abhandlungen erwiesen. Berlin, 1752. Haude. 8vo. 1. Abhandlung von dem schnellen Wachsthum der königl. Residentz Berlin vorgel. in dem Versammlung der königl. Ak. d. Wiss., Feb. 6, 1749. 2. Abhandlung von dem Alten und der Erbauung der Städte Berlin und Cölln worinn dargethan wird, dass der Markgraf Adelbert der Bär als der Eroberer und Bezwinger der Mittel-Mark Brandenburg auch der Erbauer dieser Stadt sei zu der Versammlung d. kgl. Ak. d. Wiss., im October, 1750, abgelesen.

Die gewisse Hofnung einer seligen Unsterblichkeit als der Grund des getrosten Muthes der Gerechten im Tode. . . . Leich-Predigt der Herr Christian Campen, Kgl. Preuss. Inspectoris. Berlin, 1752.

"Verzeichniss Teutscher Wörter in der Altbritischen Sprache" in the "Dictionnaire de la Langue bretonne," by Louis Le Pelletier. Paris, 1752.

Bekehrung des Rabbi Jachiels. Berlin, 1754. Bienstiel.

Bekehrung des Rabbi Jachiels. Berlin, 1758. Lange. 8vo.

Gottgefällige Glückwünsche bey dem Eintritt in das 1755. Jahr Predigt. Berlin, 1755. 4to. 16 pp.

Die göttliche Ordnung in den Veränderungen des menschlichen Geschlechts, besonders im Tode durch einige neue Beweissthümer bestätiget, und gegen des Kgl. Gross-Britanischen Berg-Raths Herrn von Justi Errinerungen und Muthmassungen in zweien Send-Schrieben an selbigen gerettet. Berlin, 1756. Haude and Spener. 4to.

Dank-Predigt wegen der am 1 Oct., 1756, von des Königs von Preussen Maj. über die Oesterreichische Kriegesmacht erfochtenen herrlichen Sieges. . . . Berlin, 1756. 4to. 16 pp.

Die abermalige Aufforderung zur Verehrung des Herrn durch den Sieg bei Leuthen in der Dank-Predigt erklärt. Berlin, 1757. 4to. 12 pp.

Heilsame Wirkungen des Tages des Schreckens durch den feindlichen Ueberfall der Stadt Berlin. Berlin, 1757.

Der grosste und herrlichste unter allen bisherigen Siegen, welchen das Kgl. Preussiche Heer am 6 May, 1757, bey der Böhmischen Hauptstadt Prag unter göttlichern Beystande erfochten. Dank-Predigt. Berlin, 1757. 4to. 16 pp.

Die Freude über die Güte und Hülfe Gottes an dem Dank- und Siegesfeste wegen des am 5ten Nov., 1757, bei Freyburg . . . verlichenen höchstwichtigen Sieges in einer Predigt . . . vorgestellet. . . . Berlin, 1757. 4to. 16 pp. Reprinted at Schwabach, 1758. 4to. 12 pp.

Gedancken von den Epidemischen Krankheiten und dem grössern Sterben des 1757ten Jahres. Berlin, 1758. 4to. Haude and Spener.

Der grosse Sieg bey Zorndorf . . . als eine Ursache der dankvollsten Freude am 15ten Sonntag nach Trinitatis . . . erkläret. Berlin, 1758. 4to. 22 pp.

Essai sur le nombre des Habitans de Londres et de Paris. 1759. (Translation.)

Die Göttliche Ermunterung zum Gebes um Friede . . . Neujahrs-Predigt. Berlin, 1760. 4to. 16 pp.

Jesus als das beste und nachahmungs würdigste Muster unserer Kindheit und Jugend. A sermon delivered at Cöln the first Sunday after Epiphany, 1761. Berlin, 1761. 8vo. 16 pp.

Betrachtung einiger Bewegungsgründe zur Barmherzigkeit und thätigen Mitleiden mit seinem Nächsten. . . . Berlin, 1761. 4to.

Die göttliche Ordnung. Berlin, 1761–62. Im Verlag der Buchhandlung der Realschule. 2 vols. 8vo.

Der Bund des Friedens und der Freundschaft mit Russland, als ein herrliches Gnadengeschenk Gottes. Berlin, 1762.

Catalogus librorum collegit, Dr. J. P. Süssmilch, notasque litteraris criticas nonnullis libris addidit Dr. J. G. König. Berlin, 1768. G. L. Winter.

Die göttliche Ordnung. Berlin, 1765. G. L. Winter. 2 vols. 8vo.

Vorrede zu Krauss' richtiger Chronologie der Bücher der Könige. Jan. 10, 1765.

Vorrede zu Samuel Buchholtz's Versuch einer Geschichte der Churmarck Brandenburg. Berlin, 1765–75. 4to.

Versuch eines Beweises, dass die erste Sprache ihren Ursprung nicht von Menschen, sondern allein vom Schöpfer erhalten habe. Berlin, 1766. 8vo.

Posthumous Publications.

Specimen etymologici Latini, seu glossarii harmonici Latino-Phoenicii. Bibliotheca Hagana. 1768. 8vo.

Continuatio Speciminis Etymologici. Bibl. Hagana. 1768. 8vo.

De goddelyke orde, herrschende in de veranderungen van het menschelyk geschlacht, etc. Amsterdam, 1770–72. P. Meijer. 4 vols. 8 vo.

Die göttliche Ordnung. Edited by C. J. Baumann. Berlin, 1775–76. G. L. Winter. 3 vols. 8vo.

Die göttliche Ordnung. Berlin, Halle (printed) 1788, 1775, 1787.

Die göttliche Ordnung. Berlin, Halle (printed) 1798. 8vo.

Manuscript Writings (of which some may have been printed).

Otium Pyrmontanum h. e. dissertatio de origine lapidum, etc. 1745.

Mémoire sur l'origine et l'age de la Ville de Berlin lu à l'Académie Oct. 20, 1750.

Observationes in linguae britannicae . . . naturam. April 26, 1752.

Anmerkungen zu des Herrn Brownriggs [Bevölkerungs] Rechnung von Bristol. In der Ak. d. Wiss. gelesen am Nov. 28, 1754.

Dissertatio dass die Menschen nach einer gewissen Regel sterben. In der Ak. d. Wiss. gelesen am 28 Nov., 1755.

Dissertatio academica qua convenientia caracterum numericorum, litterarum, initialium . . . ostenditer. April 29, 1757.

Dissertatio de Herulis. Oct. 27, 1757.

Five letters written to J. D. Michaelas, dated Berlin, 1758–66, with a statistical abstract "General Liste aller Gestorbenen, Geborenen, und Verheyrateten in allen Kgl. Preuss. Provinzen," containing the total sums for 1751 and 1756.

Teile eines Glossarium Harmonicum.

Commentatio de pago antiquo brandenburgico Belchem.

Commentatio de Stedingis.

Positiones de Theologia morali.

Varia collectanea ad historiam sacram, etc.

Remarques sur l'histoire de Brandenbourg.

Anmerkungen zu Mich. Geddes Betrachtung der Mittel wodurch die Römische Kirche ihre Leute zurückhält, dass sie nicht zu Erkenntniss der Irrthümer gelangen, so sich in ihrem Glauben . . . befinden.

Schediasma de bibliorum editionibus rarioribus.

Ob die Religion der Römer vor der christlichen in Ansehung der Bevölkerung eines Landes den Vorzug gehabt.

Vorschlag zu einer " Historia naturalis patriae."

Réflexions sur le traité L'homme machine.

Mémoire sur la dimunation des mariages et des naissances de quelques provinces de S. M. Roi de Prusse depuis l'an 1734 jusqu' à 1740.

Dissertatio von der Gefahr grösser Städte.

Dissertatio problematica, num navigatio et expeditio in terras australes utilis esse possit, et ubi primae sedes sint stabiliendae.

Bereichnung des Schadens, welchen die preussichen Lande durch epidemische Seuchen und Kriege in den drei Jahren 1756–58 erlitten haben.

Abhandlungen, worin erwiesen wird, dass der westliche Theil von Europa, besonders Teutschland, zu Julius Cäsar's Zeiten nicht vielmal volkreichen gewesen sein könne als es anjetzo ist; ja dass es damals nicht die Hälfte der jetzigen Einwohner ernähren können. (See " Deutsche Biographie," xxxvii, 193.)

Betrachtungen über die Religion.

REVIEWS AND NOTICES.

MEDICAL STATISTICS OF THE NEGRO.

The Surgical Peculiarities of the American Negro. By Rudolph Matas, M.D., Professor of Surgery, Medical Department of Tulane University of Louisiana.

In this monograph, a reprint from the *Transactions of the American Surgical Association*, Dr. Matas has placed at the command of the student of the race traits and tendencies of the American negro an important body of facts pertaining to the surgical and other peculiarities of the negro at the South.

The work is very largely statistical, and the tables are based almost exclusively on the records of the New Orleans Charity Hospital during the period 1884–93. The hospital population during the period under observation consisted of 45,182 white patients and 19,239 colored patients, of which 5667 died among the former and 4384 among the latter during the decade under observation. This would give a rate of mortality of 12.54 per 1000 for the former and of 22.79 per 1000 for the latter, or an excess of 81.7 per cent of mortality among the colored hospital population. This result is practically in harmony with the mortality experience of the colored population of New Orleans in general, which during 1890–94 exceeded by 58.6 per cent that of the white population.

In part this excess is probably due to a tendency on the part of the negro to seek hospital accommodation at an advanced stage of his diseases; but this would account at most for but a small part of the large excess of mortality prevailing among this race.

With only a very few exceptions, the rate of fatality of the various diseases is much greater among the colored population than among the whites. There are only six instances, and these mostly insignificant, where the rate of fatality is heavier among the white population. It is found that, although the white hospital population far exceeded that of the negro element, the number of deaths from tuberculosis was only 886 among the former against 936 among the latter, or nearly twice as frequent in proportion to the average hospital population.

Diseases of the respiratory organs also show an excessive prevalence and rate of fatality among the negro population. The decennial rate of prevalence was 9.13 for the white and 14.36 for the colored population, while the actual per cent of mortality was 31.43 for the former and 46.49 for the latter.

All of the venereal diseases and syphilis are shown to have been excessively prevalent and exceptionally fatal to the colored population, a result fully in harmony, in this as well as the previous instances, with the results of other investigations into the mortality of the colored population.

Fractures and dislocations are shown to have been slightly less fatal among the negro element of the hospital population. This is in harmony with the observed fact that "when viewed from the purely surgical operative standpoint, the white and the negro are practically alike." And on this point Dr. Matas further remarks: —

"There are no apparent differences between the races on the operating table. The same technique applies to both equally as well; and often, especially in the matter of resistance to shock, the negro appears to better advantage than the white man. In the general and local reactions of the tissues to infection there are some differences between the races. It is in the histogenetic tendencies of the tissues that we find the real surgical contrast between them. If we are to judge from this alone the race reveals in this last particular a marked tendency to degeneration." (p. 125.)

The work will prove extremely valuable to the student of the vital problems of the white and colored population of the South, and it is with deep regret that I find myself compelled to deal in such an inadequate manner with a work of such exceptional interest and value.

FREDERICK L. HOFFMAN.

MULHALL'S STATISTICS.

Industries and Wealth of Nations. By Michael G. Mulhall. Longmans, Green & Co. London, New York, and Bombay. 1896. Pp. 451.

Once more has Mr. Mulhall given us an illustration of his peculiar gifts. Statisticians for a long time stood in awe before Mr. Mulhall,

wrapt in admiration at the completeness of all his tables and the amazing skill with which he penetrated into regions of social and economic life, where no statistical writer had ever preceded him. But Mr. Mulhall has since then revealed to us the secrets of his art. He has shown us how tedious is the slow and cumbrous course of statistical observation, how pleasing and diverting the rapid movement of statistical computation. He has shown us his art, his peculiar legerdemain, and has confirmed our original impression that it is all humbug.

The present work is no better than his previous efforts. Like them, it is wholly bad. Fact and conjecture jostle one another on every page. We cannot well determine the percentage of his statements which record ascertained facts and those which register ingenious computations. Good and bad cannot be separated. The good cannot redeem the bad, the latter must taint the good. We do not think Schuylkill water any more palatable a beverage because we are informed that not more than five per cent is mud and the remainder entirely pure water.

We do not wish to impugn the honesty of Mr. Mulhall's purpose. The entire frankness with which he exposed his methods is an indication that he is perfectly sincere in his publications and is convinced of their value. We cannot but deplore the recrudescence in Mr. Mulhall's work of primitive methods, which obtained before statistics in the modern sense existed. A familiar public document in the history of our census quotes Dr. Johnson as saying "to count is a modern practice; the ancient method was to guess." But Mr. Mulhall reverts to the ancient method, with full confidence that he has made a discovery of precious import. We cannot but protest against the use of the word statistics for these conjectural results. And I think we cannot make the protest too strong. Mr. Mulhall's work is not statistics and should not be called so. But it passes among popular writers and speakers for what it pretends to be, and here is where it does injury. We are inclined to think that Mr. Mulhall has done nothing to counteract the popular notion which finds a vent in aphorisms regarding the truthfulness of statistics.

Mr. Mulhall is nearly two centuries behind the times. His works would have graced the school of the writers upon Political Arithmetic, of which Sir William Petty was so distinguished a representative.

The same reckless handling of figures, the same naïve delight in the results of these elaborate computations, and the same grave seriousness with which they are contemplated, characterizes the two authors so widely separated in years.

Just as Mr. Mulhall pursues now discarded methods, so he pursues aims and purposes which statistics have set aside. He has a childlike pleasure in rolling off large numbers. He is interested in finding out how many eggs are consumed in Great Britain. If the statistician cares for this it is for the purpose of ascertaining the average consumption. But Mr. Mulhall reverses matters, and with an assumed consumption per family reckons a total consumption, which has little interest. After all, the purpose of statistics is to ascertain average typical conditions, not totals which are meaningless. Here Mr. Mulhall discards all the progress which statistics has made in the past two centuries, and goes back to the inaccurate and unsatisfactory purposes of old writers upon political arithmetic.

If it were not for the wide popular vogue of Mr. Mulhall's writings it would be useless to insist upon these things. The statistical specialist has long regarded with justifiable suspicion any statement which emanates from this writer. But untrained writers and speakers who repose an unlimited confidence in the printed page have drawn largely upon a writer who furnishes exact statements where the facts are unknown. Indeed, even the elect have at times been deceived, if we can judge from the commendations of the author's Dictionary of Statistics which are printed on page iv of the present work. It is with a view of warning those who desire to speak with authority of the preposterousness of Mr. Mulhall's statements that the present book is treated in terms which may be thought severe, but which we believe to be fully justified.

R. P. F.

NEW YORK BUREAU OF MUNICIPAL STATISTICS.

The following sections of the new charter of the City of New York provide for the establishment of a Bureau of Municipal Statistics. (Chapter 378, Laws of 1897.)

Bureau of municipal statistics.

SEC. 128. There shall be a bureau of municipal statistics of the city of New York for the purpose of collecting, keeping, and publish-

ing, as hereinafter or otherwise provided by law, such statistical data relating to the city as shall be deemed of utility or interest to the city government or its citizens.

Bureau; how constituted.

SEC. 129. The bureau of municipal statistics shall consist of a chief of the bureau of municipal statistics, of a municipal statistical commission, and of such assistants to the chief of the bureau as may be found necessary for properly carrying on the work of the bureau.

Chief of bureau to be appointed by the mayor.

SEC. 130. The chief of the bureau of municipal statistics shall be appointed by the mayor for a term of four years, and shall, unless sooner removed, hold office until his successor shall be appointed and has duly qualified. He shall be *ex officio* a member and the chairman of the municipal statistical commission.

Municipal statistical commission; how constituted.

SEC. 131. The municipal statistical commission shall consist of not less than three nor more than six members, exclusive of the chief of the bureau of municipal statistics. Such members shall be appointed by the mayor and shall be residents of the city. They shall be appointed with special reference to their qualifications to give expert advice upon statistical subjects. Their term of office shall be six years; but the members of the commission first appointed shall by lot divide themselves into three classes, so that one-third shall retire at the end of two years, one-third at the end of four years, and one-third at the end of six years. The successors to such original commissioners shall be appointed for the term of six years.

Meetings of commission; quorum.

SEC. 132. The municipal statistical commission shall meet at such times as may be convenient, but at least once in each month. A majority of the commission shall constitute a quorum for the transaction of business.

Place of meeting.

SEC. 133. It shall be the duty of the board of estimate and apportionment to provide suitable offices, furniture, and appliances for the use of the bureau of municipal statistics.

Compensation of chief of bureau and his assistants, and of the commission.

SEC. 134. The chief of the bureau of municipal statistics shall receive an annual salary of $3500. He shall appoint his assistants, and shall fix their salaries with the approval of the board of estimate and apportionment. The members of the municipal statistical commission shall receive no compensation.

Powers and duties of the commission.

SEC. 135. The municipal statistical commission shall make such rules and by-laws as may be necessary for the regulation of the bureau of municipal statistics not in conflict with this act, or with any law of this State or of the United States, and shall direct the general work of the bureau of municipal statistics. The commission shall devise and carry out plans for the collection and publication by the bureau of municipal statistics of such statistical data relating to the city of New York as it may deem advisable to publish. The head of each department of the city shall, upon a request from the commission made through the mayor, and approved by him, transmit to the chief of the bureau of municipal statistics for use by the commission, upon such blanks as may be provided, or in such other manner as may be deemed convenient by the commission, such statistical data relating to the work of such department as the commission may call for.

Powers and duties of chief of bureau.

SEC. 136. The chief of the bureau of municipal statistics shall have charge of the execution of the plans outlined by the statistical commission, and shall, under the direction of the commission, attend to the collection, tabulation, and publication of reports directed to be published by the commission.

Publication of statistics.

SEC. 137. The bureau of municipal statistics shall publish annually, with the approval of the board of estimate and apportionment, a volume to be known as the "Municipal Statistics of the City of New York for the Year ——." In this volume the statistical commission shall publish, in so far as it may deem advisable, the results attending the work of the various departments of the city government for the preceding calendar year, and such other statistical information

and facts relating to the city of New York or its inhabitants as it may deem of general public interest. Such publication shall contain statistics relating to births, marriages, deaths; to the sanitary condition of the city; to the supervision of the water supply, parks, streets, pavements, sewers, and buildings of the city; to the occurrence of fires; to the administration of charities and corrections; to the administration of the police department; to the judiciary and its various departments and branches; to crime; to the business and proceedings of the criminal courts and officers of the city; to the operation of the license laws; to the children attending school and to the public schools, to the work of the department of education, and to the population of the city of school age; to franchises granted to corporations, and whether they shall have been put in use or not; to municipal revenues and expenditures; to the administration of the various city departments having charge of the expenditure of city moneys; to the administration of the tax department, and to the wealth and indebtedness of the city; and also a general statement of the legislative enactments relating to the government of the city of New York.

Limitation of expense of maintaining the bureau of municipal statistics.

Sec. 138. The expenses of such publications, and all other expenses of the bureau of municipal statistics, shall be included in the annual budget. The total expense of maintaining the bureau of municipal statistics, including salaries, shall not exceed in any one year the sum of ten thousand dollars, unless otherwise provided by the board of estimate and apportionment and the municipal assembly.

BOSTON DEPARTMENT OF STATISTICS.

In the early part of 1897 the following ordinance was passed by the city government of Boston authorizing the establishment of a Municipal Department of Statistics: —

A department of municipal statistics is hereby established, to be in charge of a board of six members, of whom the City Engineer shall, *ex officio*, be one, and the remaining five members shall be appointed by the mayor. The members of said board may be appointed by the

mayor at any time after the date of the passage of this ordinance, to serve until the first day of May next. On or before said first day of May, eighteen hundred and ninety-seven, the mayor shall appoint, subject to confirmation by the Board of Alderman, one member to serve for the term of five years, one for the term of four years, one for the term of three years, one for the term of two years, and one for the term of one year, each term beginning with said first day of May; and annually after the current year one such member shall be appointed as aforesaid for the term of five years, beginning with the first day of May in the year of his appointment. Said board shall collect, compile, and publish such statistics relating to the city of Boston, and such statistics of other cities, for purposes of comparison, as they may deem of public importance.

Under this authority Mayor Quincy appointed the following gentlemen to serve as members: Laurence Minot, Chairman; Davis R. Dewey; B. Rodman Weld; Sumner B. Pearmain; Edward M. Hartwell; William Jackson, City Engineer, *Ex Officio*.

The Department has organized with Dr. Hartwell as Secretary. Dr. Hartwell consequently resigns his position as Director of Physical Training in the Boston Public Schools. An office has been set apart in Room 71, City Hall.

MEMORIALS.

At the regular meeting of the Michigan State Board of Health at Lansing, Jan. 8, 1897, the following preamble and resolutions were unanimously adopted: —

Whereas, The bill "to provide for a permanent census service," reported to Congress by Hon. Carroll D. Wright, will be of great usefulness to the sanitary service of this State, as follows: (1) By providing a more frequent statement of population, thereby affording a basis for reliable vital rates and the more accurate calculation of intercensal populations, upon which such rates depend; (2) By providing means for ascertaining, for the first time in the history of the census, a reliable representative death-rate for the State which will be comparable with those of other States and countries — Michigan being now a so-called non-registration State; (3) If Michigan shall become a registration State by act of the present Legislature for the immediate registration of deaths, by providing an annual comparative compilation of its data in

connection with those of other registration States, thereby greatly increasing the usefulness of the Michigan statistics; therefore be it

Resolved, That the Michigan State Board of Health, at its quarterly meeting held at Lansing, January 8, 1897, urgently recommends the passage of the bill for a permanent census service on the ground of the improvement that will result therefrom to the sanitary interests of the country; and further,

Resolved, That a copy of this resolution be sent to each Senator and Representative from Michigan, with the request that they labor for the passage of the measure.

HENRY B. BAKER,
Secretary.

Office of the Secretary of the State Board of Health,
Lansing, January 11, 1897.

At a meeting of the members of the American Statistical Association resident in the city of Washington, March 25, 1897, the following resolutions were considered and adopted: —

Resolved, That the American Statistical Association be requested to submit to the President of the United States the following memorial: —

Whereas, The general government is the principal agency for the collection of statistical data concerning the population, industries, and social conditions of the people of the United States, and

Whereas, These statistics are collected, tabulated, and digested by different departments, bureaus, and offices, independent of one another, by methods and machinery that differ widely, resulting in wide differences in the quality, accuracy, and trustworthiness of the published data, and

Whereas, It is plainly desirable that these methods and results should, as far as practicable, be unified, and that the methods of collection and tabulation should be explained and the value of the resulting data be fairly characterized, to the end that these data shall be used by the public only in such manner and for such purposes as may be suitable, *therefore* be it

Resolved, That the President of the United States is hereby memorialized to appoint, by executive order, a Board of Statistics, to be composed of representatives of the departments, bureaus, and offices which collect and publish statistical data, the members of such Board to serve upon it without pay, and its work to involve no expense to the Government, except for publication.

This Board should consider the different methods in use for collecting and tabulating statistics, and suggest improvements in such methods. It should characterize the value and applicability of the various classes of statistics dealt with by the Government, to the end of preventing, as far as possible, the misuse of such data by those ignorant of their value and their inherent weaknesses.

WASHINGTON MEETINGS.

During the past year six meetings have been held by the Washington members of the American Statistical Association. The papers submitted have been as follows: —

December 31, 1896.— Opening address by President Francis A. Walker. (Printed in March Number.) "Plan for a Permanent Census Service," by Col. Carroll D. Wright.

January 25, 1897.— "Some Aspects of Our Foreign Trade," by Mr. Worthington C. Ford.

February 22, 1897.— Eulogies of the late Francis A. Walker, President of the Association. Addresses by Prof. Henry Gannett and Mr. Victor H. Olmsted.

March 22, 1897.— "Some Characteristics of Farm and Home Proprietors," by Mr. George K. Holmes.

April 26, 1897. — "Statistical Illustrations," by Prof. Henry Gannett.

May 27, 1897.— "Location of Life Insurance Policy-holders in the United States," by Mr. Henry Farquhar; "Some Considerations in Gathering Forestry Statistics," by Prof. B. E. Fernow.

MUNICIPAL STATISTICAL OFFICES.

Dr. Edward M. Hartwell, recently appointed Secretary of the Department of Statistics of Boston, in the summer of 1896 visited the principal municipal statistical offices of Europe, and has submitted his investigations in a special report to the Mayor (Boston City Document, No. 94, 1897). His conclusions are as follows: —

Municipal statistics are more comprehensive, various, and scientifically presented on the continent of Europe than is the case in Great Britain or the United States. The continental municipal statistical offices present certain characteristics, as a class, that are significant and noteworthy. (1) They are apparently independent and self-contained; (2) they are more closely connected with the executive and administrative departments of the city government than with any other; (3) they are organized as permanent scientific bureaus, under the responsible charge of highly trained specialists, who,

by reason of their character, ability, and standing, command the respect of their colleagues and of the public; (4) their jurisdiction is so well defined, and their work so systematized, that they accomplish a great amount of routine work and of independent research with a comparatively small staff of subordinate assistants and clerks; (5) their publications, being models in respect to comprehensiveness, conciseness, and trustworthiness, are of more than local value, and are serviceable for the purposes of the comparative student of municipal life and development, be he sanitarian, politician, economist, or sociologist.

The statistical offices of the leading German cities are so well organized that, through the co-operation of their directors, there is now published a *Statistical Year-Book of German Cities*, which was established in 1891. This work contains a valuable series of comparative tables upon certain standard subjects of statistical inquiry, such as are contained in the statistical year-books whose rubrics I have enumerated; and from time to time special subjects of statistical interest are contained in this year-book.

It would be impossible, under present conditions, to publish a similar work for English cities or for American cities; yet both in the case of British and American cities the public documents published by the various departments and bureaus of their respective governments contain a great deal of statistical matter. But statistical information concerning the various departments of city activity and housekeeping is now so scattered in the publications of our American municipalities that its value is materially diminished, It is manifestly in the interest of public policy that well-digested statistical tables, both of detailed and summary nature, should be prepared by competent hands, and set forth in compact, convenient form for the information of city officials and the electorate.

The establishment by American cities of a statistical bureau, which would serve as a clearing-house for all their statistics, would conduce greatly to increasing intelligent interest on the part of the citizens at large in public affairs, and would also facilitate what is greatly needed, — the dissemination of accurate official statistical reports for the benefit of students of municipal and economic affairs. At present, persons who desire complete information concerning city finances, school affairs, vital statistics, etc., etc., for a period of years, are

obliged to search in a great variety of documents for the data necessary to afford a comparative view of the development of municipal housekeeping.

It is especially noteworthy that the population statistics gathered and published by the municipal statistical offices on the continent are valuable and complete; much more so than is commonly the case with such statistics in this country. The fact that the census of cities like Berlin, Paris, Budapest, etc., are prepared by their respective municipal statistical offices under the direction of permanent and highly trained officials adds largely to their value. It is also noteworthy that statistics regarding movement of the population and the public health are much fuller, more detailed and valuable than those commonly published in this country. Not only are the vital statistics fuller and more completely analyzed, but statistics regarding persons suffering from different forms of disease are more comprehensive than those usually found in the public documents which issue from American city offices. This is partly due to the more complete system of civil registration which obtains in all continental cities, but it appears to be also largely due to the fact that officials and the public are more interested in receiving complete and regular information concerning the ravages of death and the condition of the public health. The weekly, monthly, and quarterly publications of most continental statistical offices present remarkably full and well-digested statements concerning morbidity as well as mortality statistics. The value of such statistics as a means to judging the condition of the environment of municipal population can hardly be overestimated. Reforms of far-reaching and permanent value have been instituted in several instances as a result of the mortality and morbidity statistics published by municipal statistical offices. The showing of the statistical bureau of Budapest, for instance, with regard to the amount of illness and death in low and ill-ventilated dwellings has had a marked influence in causing reform and improvement in the building laws of that city. The studies of Director Böckh, of the Berlin Statistical Office, with regard to the comparative mortality of infants fed upon different articles of food are extremely interesting and of great scientific value.

It is possible for a well-conducted municipal statistical office to render most valuable assistance to the heads of all departments of

city affairs, as well as to enable the chief magistrates of cities to acquire ready and accurate information upon a great number of subjects of vital importance. A catalogue of the special independent studies, published separately from the regular publications of the statistical offices, which I have considered, would indicate the helpful character of such offices in acquiring and spreading information of a special character upon subjects which are usually left with us to private students.

In their aims, organization, and achievements the leading municipal statistical offices on the continent of Europe betoken a more highly developed state of municipal life and organization than has yet been attained elsewhere. In the sphere of municipal administration such offices serve much the same purpose as does the "headquarters staff" in the administration of modern military affairs. That is to say, being organized as "intelligence departments," they furnish the executive department of the city government with such information as it requires for devising and conducting its plan of campaign against ignorance, disease, crime, pauperism, and extravagance.

Through their publications such offices are also capable of rendering important aid to the electorate in arriving at intelligent conclusions as to the degree of fidelity and efficiency shown by its public servants in the discharge of their duties.

Experience has shown that city statistical offices, such as are described in the foregoing pages, constitute an important and effectual aid to the intelligent, practical, and economical conduct of municipal business and housekeeping. The establishment by Boston and other great cities of the United States of similar offices could hardly fail to conduce to better government and a more enlightened public spirit, provided the teachings of the best European experience in this field were clearly apprehended and consistently appplied in their organization and management.

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NEW SERIES, No. 40. DECEMBER, 1897.

FARM OWNERSHIP AND TENANCY IN THE UNITED STATES.

By Edward Atkinson.

Under the above title Mr. Atkinson presented a paper at the meeting of the International Statistical Institute held at St. Petersburg, August, 1897. Owing to its length, and the fact that portions of it are already familiar to American readers, only an abstract is here printed. This is followed, page 336, by an Analysis and tables prepared by L. G. Powers, Commissioner of the Bureau of Labor Statistics of Minnesota.

Mr. Atkinson began by stating that the population of the United States, now numbering approximately 73,000,000, constitutes but five per cent of the estimated population of the globe; yet it consumes more than one-third of the commercial product of iron, steel, and copper within its limits. It consumes about 25 per cent of the commercial product of wool of the world; nearly 30 per cent of the commercial product of cotton; and produces more than 60 per cent of the world's cotton crop. Of food it raises all that our population can consume, with an excess which might supply another nation nearly as great in number. In the distribution of these products it possesses and makes use of nearly one-half the railway mileage of the world. In recent years the power of production, not only of the soil the forest, and the mine, but of the factory and the workshop,

has been so greatly increased by the applications of science and invention as to compel us to look more and more to foreign commerce for a market for our excess; and this fact cannot fail ere long to dominate the policy of the country. Underlying this whole power of production and of mutual service is the question of farm ownership and farm tenancy.

Within the lives of the present generation the national policy was brought into force of granting large areas of land to railway corporations in alternate sections of 640 acres each, and the homestead act for granting to actual settlers homes free of charge of 160 acres each. Under the operation of that policy the vast territory to the west of the Mississippi river has been rapidly opened to settlers, and since 1865 over 2,000,000 new farms have been created from the virgin prairies.

The abolition of slavery, the increasing use of machinery, the opening up of a vast area of new land for settlement, and the more recent decrease of opportunities for obtaining free or cheap farm lands, are and have been all factors at work changing the size of farm holdings in the United States, and also changing the character of the tenures by which farm lands are operated. Under the operation of these factors the cultivation of farms by tenants or lessees has during the past generation been actually and relatively increasing in all parts of the United States. Many persons, perhaps the great majority even in America, of those who have not given due attention to the subject, have been under the impression that this increasing farm tenancy marks a progressive degradation of the great body of agriculturalists. Is that impression well or ill founded? This question may be stated in other terms as follows: —

The area of the United States, omitting the territory of Alaska, which is not within the agricultural region, is slightly less than three million (2,970,000) square miles. Without entering into a very close analysis of the qualities of this

land, extending from the semi-tropical sections of Florida and of Texas to the northern limit of Dakota and Minnesota, about one-half of this area may be called arable land. The remainder is largely suitable for pasturage or is covered with timber, a considerable portion being mountainous, a relatively small part, not yet accurately measured, semi-arid or desert. About 12 per cent of this total area is under the plow, or 24 per cent of that part which may be considered good arable land.

This area, named as under the plow, does not include land in grass or pasture customarily worked in rotation with grain or other crops. It is the area specifically assigned to each particular crop designated in the year named.

The principal crops of the United States raised in the year 1896 were as follows,— approximate area, quantity, and approximate value at the farms being given as reported by the Department of Agiculture : —

Crop.	Square Miles.	Area.—Acres.	Quantity.	Approximate Farm Valuation.
Maize	126,604	81,027,156	2,283,875,165 bu.	$491,006,967
Hay	67,593	43,259,756	59,282,158 tons	388,145,614
Wheat	54,092	34,618,646	427,684,346 bu.	310,602,539
Cotton	36,634	23,445,845	8,534,870 bales	283,688,043
Oats	43,072	27,565,985	707,346,404 bu.	132,485,033
Potatoes	4,324	2,767,465	252,234,540 bu.	72,182,350
Tobacco	930	594,749	403,004,320 lbs.	24,258,070
Barley	4,610	2,950,539	69,695,223 bu.	22,491,241
Rye	2,862	1,831,201	24,369,047 bu.	9,960,769
Buckwheat	1,179	754,898	14.089,783 bu.	5,522,339
Total	341,900	218,816,240	.....	$1,740,342,965

The other crops whose acreage was given in the last Census Report (flax, "truck," sweet potatoes, sorghum, cane, peanuts, rice, broom-corn, and hemp, naming them in order of area) then covered 3,552,129 acres, making an addition of 1.64 per cent to the area under the enumerated crops. A like addition to the total in the table above gives 222,400,000

acres as the area "under the plow" in 1896, — 347,500 square miles in large measure held by men holding an estate in land; hence the grave importance of the very large proportion of farmers owning their land free of incumbrance. Nearly 80 per cent of the farms which are owned and worked either by owners or tenants are free of any incumbrance or debt secured by mortgage. The debt upon the remainder of the farm land of the United States bears a ratio of 35.55 per cent to the true value of the property encumbered, and 8.18 per cent to the value of all farm lands.

Attention has already been called to the changes that in recent years have been made in the United States in the size of agricultural holdings, and to the actual and relative increase in the number of tenant farmers or lessees during the same time. The question has been stated as to whether or not these changes are adverse or favorable to the progress of agriculture, and whether or not they conduce to the welfare of the State. The writer had long held to the wholly favorably aspect of these changes, judging, on a general review of the subject, that tenant farming marked a step in the progress of the common laborer toward becoming the owner of his farm, and that it did not indicate any tendency on the part of those who had been farmers to become lessees under a system of consolidation of small farms into large areas owned by one landlord. That such view is the true one is now made plain by the very thorough and complete proofs which have been so carefully prepared by his collaborateur, Mr. L. G. Powers, Chief of the Bureau of Labor of the State of Minnesota, one of the greatest and most prosperous grain-growing States of the Mississippi valley.

It has been shown that this area actually under cultivation in grain, cotton, and other farm products is less than 12 per cent of the total area of the nation, excluding Alaska, or 24 per cent of what might be considered good arable land. Even this area has not yet been brought to any full average standard of production, as it will be under the influences which

are now in force. It may be remarked that this area under the plow in the specific crops named but little exceeds the area of the single State of Texas, including with it the Indian Territory on its northern border, heretofore occupied as an Indian reservation. Within very recent years the title of the Indian tribes to this land has been recovered by purchase. The Indians themselves have been settled in severalty upon separate parcels, while from this reservation the new Territory of Oklahoma has been established, soon to become a State, and another State will hereafter be added. Such is the general fertility and such are the conditions of climate in this specific portion of the United States — Texas and the Indian Territory — that the entire grain, hay, cotton, rice, tobacco, and sugar crops now made in all the United States could readily be made within this section only.

According to the latest enumeration, in 1890, the total number of farms occupied by owners or tenants was 4,564,641; the number of farmers owning or occupying under any tenure was 5,281,557; the number of farm laborers was 3,004,061; the number otherwise engaged in agriculture, not including, however, the wood chopper and lumbermen, was 180,745; total, 8,466,363,— constituting 37.2 per cent of the total number of persons occupied in gainful occupations. To this number should doubtless be added a certain number of laborers listed in the census under the general term of laborers, but occupied during a part or the whole of the year upon the farm. The number of persons occupied in flour mills, meat-packing establishments, in canning meats, vegetables, and fruits, and in butter factories and creameries, can only be estimated at approximately one hundred thousand. The valuation does not cover all the products of agriculture, only the valuation of the specific crops named, which are the important products. Such are the statistical conditions to be considered. About half our population is occupied in agriculture or in the secondary processes.

Nearly 80 per cent of the farms which are owned and worked either by owners or tenants are free of any incumbrance or debt secured by mortgage. The debt upon the remainder of the farm land of the United States bears a ratio of less than 36 per cent to the true value of the farm property which is under mortgage,— less than 10 per cent of the value of all farms.

The influence of this steady increase in farm ownership will be almost world wide. The manufacturing States of Europe have for the last few years depended in great measure upon the wheat of the United States for their supply of bread, and upon the cotton of the United States for the working of their spindles. The changes now in progress will probably diminish the quantity of wheat available for export, but will increase or have increased the quantity of cotton. When the fertile and very extensive prairies of the far Northwest were first opened to cultivation by the construction of railways in advance of settlement, what may be called the manufacture of wheat was entered upon on a grand scale. The whole process was conducted by the application of machinery to a virgin soil. It was for a time very profitable. The invention of the self-binder, which was perfected between the years 1876 and 1880, did away with the last element of hand labor, each self-binder dispensing with the work of five or six hand-binders, who had commanded almost any price for their work during the harvest season. When that simple invention was applied the product of wheat was carried from an average, in round figures, of 300,000,000 bushels, in the early part of the decade between 1870 and 1880, to 500,000,000 bushels in the latter part of that decade and in the early part of the subsequent period.

This rapid and sudden increase rendered the export of a large excess possible, from which the United States recovered the gold enabling the country to resume specie payment in 1879,— the gold imported in that period in advance of

resumption being almost exactly the equivalent of the wheat exported.

But this single crop system is a very exhaustive one. It has ceased to be profitable. The great wheat farms are being cut up into farms of moderate area, on which wheat is cultivated in due rotation with a variety of other crops. Under these conditions we may still produce an excess of wheat for some years to come, yet it is becoming a relatively unimportant crop, and at the lessened price has yielded or will yield to other products which are more profitable. As time goes on there can be little doubt that the wheat of the empire of Russia, supplemented by the wheat of the Argentine Rupublic, will more and more displace the wheat supplied by the United States, as a more profitable use is found for the small farms.

On the other hand, these very same forces of the subdivision of land under tenancy or ownership, which have tended to diminish the relative wheat crop of the West, have tended and still tend to the increase of the cotton crop of the South. Under the slave system of labor the unit of land was the great plantation, the limit of the crop was in the amount that could be picked, not in the amount that could be planted and cultivated. Whites would not work with the slaves on the cotton plantations, therefore the crop was restricted to what the hands on the plantations could pick, except in Texas, where the cultivation of small farms by white men had begun even before the war; but at that time the crop of Texas was a small factor in the total. The abolition of slavery has changed these conditions. Great plantations are almost unknown. Negro tenants and white farmers now emulate each other, so that the whole force of every family takes to the cotton field in the picking season. The saving of the seed, formerly wasted, and its conversion into many useful products has added more than $50,000,000 a year to the value of each crop; 10,000,000 bales of cotton are now

made where less than 5,000,000 was the largest yield under the old system.

The State of Texas alone now makes nearly as much cotton as all the cotton States did before the war. The cotton of Texas is almost wholly the product of white men's farms and is rapidly increasing. The area of Texas is 275,000 square miles. On less than a tenth of the area of this one State the whole cotton crop of the United States could easily be grown.

Coupled with the increasing number of the owners of small farms, who must deal with the soil as a laboratory rather than as a mine, an extensive system of agricultural experiment stations has been brought into existence under the national government. There is one or more in every State, and from these centres improved treatment of the land, improved processes and instruction in dairying, and all the analogous arts, are rapidly extending. Within the generation that has witnessed the establishment of this system of instruction in agriculture, the whole system of farming in the United States will be subjected to a complete revolution.

Analysis by Mr. L. G. Powers.

As the result of the various industrial factors summarized by Mr. Atkinson, there may be noted, in the period since 1860, several changes, almost revolutionary in their nature, in the size of agricultural holdings in the United States and in the terms of tenure by which they are operated. From 1860 to 1870, or thereabout, there was in all portions of the nation a great increase, both actual and relative, in the number of small holdings, under 50 acres, and a corresponding decrease in the number of greater size. In the old slave States this change accompanied and resulted from the emancipation of the negroes, and the social and economic revolutions in that section caused by the war. In the old free States similar changes followed the development of the fac-

tory system, and the consequent rise of wages that occurred at that time, not only in the cities but also upon the farms. From 1870 to 1880 there was everywhere a movement, in the size of holdings, the reverse of the one just noticed for the preceding decade. This change followed and resulted from the introduction and general use of labor-saving machinery upon the farms not far from 1870. From 1880 to 1890 there was a small actual increase and a slight relative decrease in the number of holdings under 100 acres, and a small actual and relative increase in the number of those larger. The modifications in the size of agricultural holdings in this decade mark the earlier stages of a more scientific cultivation of the soil and the lessened supply of desirable cheap or free land for settlement.

During the period since 1860, with all the fluctuations in the size of farm holdings, there has been a steady, though irregular, increase in the actual and relative number of farms operated by tenants or lessees. This increase in farm tenancy has, however, during all the period, been associated with, and often has been directly caused by, an upward social movement extending from the lowest slavery of the negroes up to the most independent phase of farm ownership.

Exhibits A, B, and C show how the lowest form of farm tenancy, that which is found among families tilling less than 20 acres of land for a share of the products, decreased actually and relatively between 1880 and 1890. The decrease in the number of tenants of this lowest order is a part of the rise of this class of tenants along three distinct lines: —

(1.) These tenants for a share of the products of a small parcel of land tend to rise to the cultivation of a larger tract of land. This tendency is disclosed by the decrease in the number of small and the increase in the number of larger holdings of this class of tenant-operated farms.

(2.) A second line of progress for these lowest tenants is, after acquiring a small amount of capital of their own, to rent for cash the land at first tilled by them for a share of

the products. This line of progress is disclosed by the fact that the actual number of small holdings for cash rental increases, while that for a share of the product decreases.

There is a further progress in this second class, as there was in the lowest. This is shown by the greater actual and relative increase of the number of the larger holdings.

(3.) A third line of progress is shown by the rise of all classes of tenants to farm ownership. The movement along this line is indicated by the greater actual and relative increase in the number of farm owners than of tenants, both of the small and large farms.

This upward tendency since 1880 among farm tenants, and the movement from small to large holdings, etc., is clearly traceable in Exhibits A, B, and C. Another line of facts showing the same tendency among farm tenants to rise to farm ownership is shown by Exhibit D, which is a table compiled from the reports of the United States Census. This gives for the nation and for two great groups of States the sub-classification of owners and tenants by ages. This compilation proves that the young people are tenants in large proportion, while the older ones are more largely farm owners. The chance of rising is largest in the North Central States and the smallest in the South Central. It is greater, in other words, with the white tenants than with the descendants of the old negro class. In the North Central States the farm owners under 25 years of age constitute only 38.52 per cent of the whole, while the tenants make up 61.46 per cent. This stands in contrast with the division of the same classes among the farmers over 60 years of age. Of these farmers 90.14 per cent were owners, and only 9.86 per cent were tenants. These figures indicate that five-sixths of those who start as tenants in this group of States rise before 60 years of age to become owners of farms.

As further showing the probability of a tenant rising to farm ownership in the great group of North Central States, attention is called to a special investigation made by the

Minnesota Bureau of Labor in 1893. That investigation ascertained the personal history of a large number of farmers in a number of different and typical counties of the State. It thus ascertained that 15.1 per cent of the farm owners had risen from farm tenancy after an average life as tenant of only four years. The men now working as tenants had averaged nine years in that capacity. Of the best men now working as tenants, each year, one in four will then doubtless rise in the future, as in the past, to farm ownership. Of the whole, including the shiftless and inefficient, one in nine will thus rise to the higher position.

Since 1860 the number of farms has increased in the United States from 2,044,077 to 4,564,641 in 1890. This is an increase in 30 years of 123.31 per cent. The number of farm families, by the estimates of the table, increased from 3,358,750 to 5,545,500, or 65.11 per cent. The number of farm-owning families, by the same estimates, increased from 1,850,000 to 3,392,746, or 83.39 per cent. More exact data, if obtainable, would probably show this percentage of gain to have been slightly greater than these figures. But while the number of farms actually increased 123.31 per cent, and the number of farm-owning families increased over 83 per cent, the number of dependent families, of tenants, wage-earners, and slaves had, according to the estimates of this table, increased only from 1,508,750 to 2,132,754, or 43.25 per cent.

Had the dependent families on farms increased as rapidly in numbers as did the farm there would have been in 1890 from 1,200,000 to 1,400,000 more of such families than were at that time in existence on those farms. The difference marks the upward movement of that number of families from the low positions of slaves or wage-earners to the higher ones of farm tenants and owners. Had the families owning farms increased only as rapidly as did all farm families there would have been in 1890 not to exceed 3,075,000 of such families. Their actual numbers were not less and probably exceeded 3,392,796. The difference, 317,746, represents the number

of families who in 30 years had risen from the lowest depths of slavery all the way up to farm ownership, or had made the journey from some one of the two intermediate positions of wage service or tenancy.

The census investigation of 1890 found 1,624,433 families residing on farms tilled by themselves as tenants and farms upon which they thus made their homes. This number is materially greater than that of the farms in the nation reported by the same authority as cultivated by tenants.

The census found 3,142,746 families residing upon the farms owned and operated by them. The number of farms operated by their owners was somewhat larger,— 3,269,778. The writer gives as his estimate of all farm-owning families the number of 3,392,746. This includes an estimate for the families residing not on the farms owned or tilled by them, but apart from the same, in a "home." It includes not only those farmers who, residing in a "home," work a farm of their own. It includes some who, residing in such "homes," employ their time in working upon their farms, keeping them in good repair, while those farms are leased to tenants. It also includes those few men who reside on the farms owned by themselves but operated by tenants, such farmers being classed by the Census as "home" and not "farm" families.

After allowing for all possible elements of error in these estimates, and in the other figures here presented from the census, this conclusion is reached: —

The ascertainable facts about American agriculture leave no question that there is and has been for thirty odd years at least a most momentous forward industrial and social movement among the tillers of the soil. Since 1860 the farm owners, in addition to their natural increase in numbers due to the growth of agricultural population, have added to their number a total of 317,000 families. These in 30 years had risen from lower economical conditions or stations in life. During the same period the lower classes of slaves or wage-earners had seen from 1,200,000 to 1,400,000 families

TABLE

AN EXHIBIT FOR THE UNITED STATES, FOR VARIOUS DECENNIAL PERIODS, OF THE NUMB
CENTAGES WHICH THE VARIOUS SU

Acreage of Farms Cultivated.	Years.	Farms of All Tenures.	Number of Farms Cultivated by				F
			Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.	Ow
Under 10 acres	1860	54,676	.....	.....	.....	.....	
	1870	178,896	.....	.....	.....	.....	
	1880	139,241	88,057	51,184	23,779	27,405	
	1890	150,194	98,990	51,204	26,181	25,023	
10 and under 20 acres	1860	162,178	.....	.....	.....	.....	
	1870	294,627	.....	.....	.....	.....	
	1880	254,740	122,411	132,338	41,552	90,816	
	1890	265,550	132,970	132,580	46,921	85,659	
20 and under 50 acres	1860	616,558	.....	.....	.....	.....	
	1870	847,614	.....	.....	.....	.....	
	1880	781,574	460,486	321,088	97,399	223,689	
	1890	902,777	505,313	397,464	137,709	259,755	
50 and under 100 acres	1860	608,878	.....	.....	.....	.....	
	1870	754,221	.....	.....	.....	.....	
	1880	1,032,810	804,522	228,288	69,663	158,625	
	1890	1,121,485	840,178	281,307	100,613	180,694	
100 and under 500 acres	1860	487,041	.....	.....	.....	.....	
	1870	565,054	.....	.....	.....	.....	
	1880	1,695,983	1,416,618	279,365	84,645	194,720	
	1890	2,008,694	1,594,641	414,053	135,748	278,305	
500 and under 1000 acres	1860	20,319	.....	.....	.....	.....	
	1870	15,853	.....	.....	.....	.....	
	1880	75,972	66,447	9,525	3,956	5,569	
	1890	84,395	70,911	13,484	5,216	8,268	
Over 1000 acres	1860	5,364	.....	.....	.....	.....	
	1870	3,720	.....	.....	.....	.....	
	1880	28,578	25,765	2,813	1,393	1,420	
	1890	31,546	26,725	4,821	2,271	2,550	
Grand total	1860	1,955,014	.....	.....	.....	.....	
	1870	2,659,985	.....	.....	.....	.....	
	1880	4,008,907	2,984,306	1,024,601	322,357	702,244	
	1890	4,564,641	3,269,728	1,294,913	454,659	840,254	
Total under 50 acres	1860	833,412	.....	.....	.....	.....	
	1870	1,321,137	.....	.....	.....	.....	
	1880	1,175,564	670,954	504,610	162,700	341,910	
	1890	1,318,521	737,273	581,248	210,811	370,437	
Total over 50 acres	1860	1,121,602	.....	.....	.....	.....	
	1870	1,338,848	.....	.....	.....	.....	
	1880	2,833,343	2,313,352	519,991	159,657	360,334	
	1890	3,246,120	2,532,455	713,665	243,848	469,817	

TABLE A.

F THE NUMBER OF FARMS OF ALL TENURES AND OF VARIOUS SIZES, TOGETHER WITH THE PER-
VARIOUS SUBDIVISIONS ARE OF THE WHOLE.

	Percentage of all Farms of the Same Size Cultivated by				Percentage of all Farms.				
						Cultivated by			
Tenants on Shares.	Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.	All Farms.	Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.
.....	....	....	....	....	2.80	....	....	....	....
.....	....	....	....	....	6.76	....	....	....	....
27,405	63.2	36.8	17.2	19.6	3.48	2.20	1.28	.59	.69
25,023	65.9	34.1	17.4	16.7	3.29	2.17	1.12	.57	55
.....	....	....	....	....	8.29	....	....	....	....
.....	....	....	....	....	11.07	....	....	....	....
90,816	48.0	52.0	16.4	35.6	6.35	3.05	3.30	1.04	2.26
85,650	50.0	50.0	17.6	32.4	5.81	2.91	2.90	1.03	1.87
.....	....	....	....	....	31.54	....	....	....	....
.....	....	....	....	....	31.86	....	....	....	....
223,689	58.9	41.1	12.5	28.6	19.50	11.49	8.01	2.43	5.58
259,755	55.9	44.1	15.3	28.8	19.79	11.08	8.71	3.02	5.69
.....	....	....	....	....	31.15	....	....	....	....
.....	....	....	....	....	28.35	....	....	....	....
158,625	77.9	22.1	6.7	15.4	25.77	20.07	5.70	1.74	3.96
180,694	74.9	25.1	9.0	16.1	24.58	18.41	6.17	2.21	3.96
.....	....	....	....	....	24.91	....	....	....	....
.....	....	....	....	....	21.24	....	....	....	....
194,720	83.5	16.5	5.0	11.5	42.30	35.33	6.97	2.11	4.86
278,305	79.4	20.6	6.7	13.9	44.00	34.93	9.07	2.97	6.10
.....	....	....	....	....	1.04	....	....	....	....
.....	....	....	....	....	.58	....	....	....	....
5,569	87.5	12.5	5.2	7.3	1.90	1.66	.24	.10	.14
8,268	84.0	16.0	6.2	9.8	1.84	1.55	.29	.11	.18
.....	....	....	....	....	.27	....	....	....	....
.....	....	....	....	....	.14	....	....	....	....
1,420	90.1	9.9	4.9	5.0	.70	.64	.06	.03	.03
2,550	84.7	15.3	5.2	8.1	.69	.58	.11	.05	.06
.....	....	....	....	....	100.00	....	....	....	....
.....	....	....	....	....	100.00	....	....	....	....
02,244	74.4	25.6	8.1	17.5	100.00	74.44	25.56	8.04	17.52
40,254	71.6	28.4	10.0	18.4	100.00	71.63	28.37	9.96	18.41
.. ...	....	....	....	....	42.63	....	....	....	....
.....	....	....	....	....	49.69	....	....	....	....
41,910	57.1	42.9	13.8	29.1	29.33	16.74	12.59	4.06	8.53
70,437	55.9	44.1	16.0	28.1	28.89	16.16	12.73	4.62	8.11
.....	....	...	....	....	57.37	....	....	....	....
.....	....	....	....	....	50.31	....	....	....	....
30,334	81.6	18.4	5.7	12.7	70.67	57.70	12.97	3.98	8.99
39,817	78.0	22.0	7.5	14.5	71.11	55.47	15.64	5.34	10.30

TABLE

AN EXHIBIT FOR THE TWELVE STATES OF OHIO, INDIANA, ILLINOIS, MICHIGAN, WISCONSI
FOUND IN THE NORTH CENTRAL GROUP OF STATES, FOR VARIOUS DECENNIAL PE
TOGETHER WITH THE PERCENTAGES WHICH THE

Acreage of Farms Cultivated.	Years.	Farms of All Tenures.	Number of Farms Cultivated by				
			Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.	O
Under 10 acres	1860	17,993	.....	.....	.....	.....	
	1870	57,750	.....	.....	.....	.....	
	1880	33,661	25,222	8,439	4,185	4,254	
	1890	36,269	28,400	7,869	4,679	3,181	
10 and under 20 acres	1860	61,634	.....	.....	.....	.....	
	1870	100,647	.....	.....	.....	.....	
	1880	53,551	35,266	18,285	5,825	12,460	
	1890	51,084	37,745	14,239	6,092	8,147	
20 and under 50 acres	1860	266,991	.....	.....	.....	.....	
	1870	370,816	.....	.....	.....	.....	
	1880	295,486	217,009	78,477	19,356	59,121	
	1890	297,511	226,753	70,758	22,784	47,974	
50 and under 100 acres	1860	243,260	.....	.....	.....	.....	
	1870	352,860	.....	.....	.....	.....	
	1880	509,160	398,536	110,624	26,683	83,941	
	1890	526,935	397,099	129,836	42,901	86,935	
100 and under 500 acres	1860	157,411	.....	.....	.....	.....	
	1870	238,349	.....	.....	.....	.....	
	1880	787,512	657,650	129,862	32,024	97,838	
	1890	983,218	761,138	222,080	69,191	152,889	
500 and under 1000 acres	1860	2,417	.....	.....	.....	.....	
	1870	4,010	.....	.....	.....	.....	
	1880	15,608	13,858	1,750	570	1,180	
	1890	23,437	19,250	4,187	1,315	2,872	
Over 1000 acres	1860	500	.....	.....	.....	.....	
	1870	637	.....	.....	.....	.....	
	1880	2,990	2,684	306	100	206	
	1890	4,468	3,692	776	286	490	
Grand total	1860	750,206	.....	.....	.....	.....	
	1870	1,125,078	.....	.....	.....	.....	
	1880	1,697,968	1,350,225	347,743	88,743	259,000	
	1890	1,923,822	1,474,086	449,730	147,248	302,488	
Total under 50 acres	1860	346,618	.....	.....	.....	.....	
	1870	529,213	.....	.....	.....	.....	
	1880	382,698	277,497	105,201	29,366	75,835	
	1890	385,768	292,907	92,857	33,555	59,302	
Total over 50 acres	1860	403,588	.....	.....	.....	.....	
	1870	595,865	.....	.....	.....	.....	
	1880	1,315,270	1,072,728	242,542	59,377	183,165	
	1890	1,538,058	1,181,179	356,879	113,693	243,186	

TABLE B.

N, WISCONSIN, MINNESOTA, NORTH AND SOUTH DAKOTA, IOWA, MISSOURI, KANSAS, AND NEBRASKA, CENNIAL PERIODS, OF THE NUMBER OF FARMS OF ALL TENURES AND OF VARIOUS SIZES, WHICH THE VARIOUS SUBDIVISIONS ARE OF THE WHOLE.

y	Percentage of all Farms of the Same Size Cultivated by				Percentage of all Farms.				
						Cultivated by			
Tenants on Shares.	Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.	All Farms.	Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.
.....	....	....	....	....	2.40	....	....	....	....
.....	....	....	....	....	5.13	....	....	....	....
4,254	75.0	25.0	12.4	12.6	1.98	1.48	.50	.25	.25
3,181	78.3	21.7	12.9	8.8	1.88	1.48	.40	.24	16
.....	....	....	....	....	8.22	....	....	....	....
.....	....	....	....	....	8.95	....	....	....	....
12,460	65.9	34.1	10.9	23.2	3.15	2.08	1.07	.34	.73
8,147	72.6	27.4	11.3	16.1	2.70	1.96	.74	.32	.42
.....	....	....	....	....	35.57	....	....	....	....
.....	....	....	....	....	32.96	....	....	....	....
59,121	73.4	26.6	6.6	20.0	17.40	12.79	4.61	1.13	3.48
47,974	76.2	23.8	7.7	16.1	15.47	11.79	3.68	1.19	2.49
.....	....	....	....	....	32.43	....	....	....	....
.....	....	....	....	....	31.36	....	....	....	....
83,941	78.5	21.5	5.3	16.2	29.99	23.47	6.52	1.57	4.95
86,935	75.4	24.6	8.1	16.5	27.39	20.64	6.75	2.23	4.52
.....	....	....	....	....	20.99	....	....	....	....
.....	....	....	....	....	21.18	....	....	....	....
97,538	83.5	16.5	4.1	12.4	46.39	38.73	7.66	1.90	5.96
152,889	77.6	22.4	7.0	15.4	51.12	39.57	11.55	3.60	7.95
.....	....	....	....	....	.32	....	....	....	....
.....	....	....	....	....	.36	....	....	....	....
1,180	88.8	11.2	3.6	7.6	.91	.81	.10	.03	.07
2,872	82.1	17.9	5.6	12.3	1.22	1.00	.22	.07	.15
.....	....	....	....	....	.67	....	....	....	....
.....	....	....	....	....	.06	....	....	....	....
206	89.8	10.2	3.3	6.9	.18	.16	.02	.01	.01
490	82.6	17.4	6.4	11.0	.22	.18	.04	.01	.03
.....	....	....	....	....	100.00	....	....	....	....
.....	....	....	....	....	100.00	....	....	....	....
259,000	79.5	20.5	5.2	15.3	100.00	79.52	20.48	5.23	15.25
302,488	76.6	23.4	7.6	15.8	100.00	76.62	23.38	7.66	15.72
.....	....	....	....	....	46.19	....	....	....	....
.....	....	....	....	....	47.04	....	....	....	....
75,835	72.6	27.4	7.7	19.7	22.53	16.35	6.18	2.72	4.46
59,302	76.4	23.6	8.7	14.9	20.05	15.23	4.82	1.75	3.07
.....	....	....	....	....	53.81	....	....	....	....
.....	....	....	....	....	52.96	....	....	....	....
183,165	81.6	18.4	4.5	13.9	77.47	63.17	14.30	3.51	10.79
243,186	76.8	23.2	7.4	15.8	79.95	61.39	18.56	5.91	12.65

TABLE

AN EXHIBIT FOR THE EIGHT STATES AND TERRITORIES OF ALABAMA, MISSISSIPPI, LOUISI
SOUTH CENTRAL GROUP OF STATES, FOR VARIOUS DECENNIAL PERIODS, O
TOGETHER WITH THE PERCENTAGES WHICH THE

Acreage of Farms Cultivated.	Years.	Farms of All Tenures.	Number of Farms Cultivated by				P
			Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.	Ow
Under 10 acres	1860	9,712	.....	.....	.....	.....	
	1870	45,563	.....	.....	.....	.....	
	1880	27,110	10,018	17,092	5,530	11,562	
	1890	31,235	13,202	18,033	7,309	10,724	
10 and under 20 acres	1860	35,461	.....	.....	.....	.....	
	1870	87,219	.....	.....	.....	.....	
	1880	90,322	17,910	72,412	19,344	53,068	
	1890	93,818	19,380	74,438	23,096	51,342	
20 and under 50 acres	1860	108,303	.....	.....	.....	.....	
	1870	188,717	.....	.....	.....	.....	
	1880	209,506	71,690	137,906	42,363	95,543	
	1890	282,933	91,478	191,455	67,956	123,499	
50 and under 100 acres	1860	86,134	.....	.....	.....	.....	
	1870	105,897	.....	.....	.....	.....	
	1880	185,727	137,400	48,327	18,191	30,136	
	1890	232,997	164,648	67,849	26,917	40,932	
100 and under 500 acres	1860	86,878	.....	.....	.....	.....	
	1870	78,439	.....	.....	.....	.....	
	1880	336,362	294,460	41,902	17,784	24,118	
	1890	407,328	346,272	61,056	24,122	36,934	
500 and under 1000 acres	1860	7,819	.....	.....	.....	.....	
	1870	4,163	.....	.....	.....	.....	
	1880	25,872	23,319	2,553	1,349	1,204	
	1890	26,666	23,323	3,343	1,598	1,745	
Over 1000 acres	1860	2,028	.....	.....	.....	.....	
	1870	1,000	.....	.....	.....	.....	
	1880	11,659	10,759	900	531	369	
	1890	12,295	10,669	1,626	903	723	
Grand total	1860	336,335	.....	.....	.....	.....	
	1870	510,998	.....	.....	.....	.....	
	1880	886,648	565,556	321,092	105,092	216,000	
	1890	1,086,772	668,972	417,800	151,901	265,899	
Total under 50 acres	1860	153,476	.....	.....	.....	.....	
	1870	321,499	.....	.....	.....	.....	
	1880	327,028	99,618	227,410	67,237	160,173	
	1890	407,986	124,060	283,927	98,361	185,565	
Total over 50 acres	1860	182,850	.....	.....	.....	.....	
	1870	189,499	.....	.....	.....	.....	
	1880	559,620	465,938	93,682	37,855	55,827	
	1890	678,786	544,912	133,874	53,540	80,334	

TABLE C.

IPPI, LOUISIANA, TEXAS, KENTUCKY, TENNESSEE, ARKANSAS, AND OKLAHOMA, FOUND IN THE PERIODS, OF THE NUMBER OF FARMS OF ALL TENURES AND OF VARIOUS SIZES, WHICH THE VARIOUS SUBDIVISIONS ARE OF THE WHOLE.

	Percentage of all Farms of the Same Size Cultivated by				Percentage of all Farms.				
						Cultivated by			
enants on hares.	Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.	All Farms.	Owners.	Tenants.	Tenants for Cash Rental.	Tenants on Shares.
.....	....	....	....	....	2.88	....	....	....	....
.....	....	....	....	....	8.91	....	....	....	....
11,562	36.9	63.1	20.4	42.7	3.06	1.13	1.93	.63	1.30
10,724	42.3	57.7	23.4	34.3	2.87	1.21	1.66	.67	99
.....	....	....	....	....	10.54	....	....	....	....
.....	....	....	....	....	17.07	....	....	....	....
53,068	19.8	80.2	21.4	58.8	10.19	2.02	8.17	2.18	5.99
51,342	20.7	79.3	24.6	54.7	8.63	1.78	6.85	2.13	4.72
.....	....	....	....	....	32.20	....	....	....	....
.....	....	....	....	....	36.93	....	....	....	....
95,543	34.2	65.8	20.2	45.6	23.64	8.08	15.56	4.78	10.78
23,409	32.4	67.6	24.0	43.6	26.03	8.42	17.61	6.25	11.36
.....	....	....	....	....	25.61	....	....	....	....
.....	....	....	....	....	20.72	....	....	....	....
30,136	74.0	26.0	9.8	16.2	20.94	15.50	5.44	2.04	3.40
40,932	70.8	29.2	11.6	17.6	21.40	15.15	6.25	2.48	3.77
.....	....	....	....	....	25.83	....	....	....	....
.....	....	....	....	....	15.37	....	....	....	....
24,118	87.5	12.5	5.3	7.2	37.94	33.21	4.73	2.01	2.72
36,934	85.0	15.0	6.0	9.0	37.48	31.86	5.62	2.22	3.40
.....	....	....	....	....	2.33	....	....	....	....
.....	....	....	....	....	.80	....	....	....	....
1,204	90.2	9.8	5.2	4.6	2.91	2.63	.28	.15	.13
1,745	87.4	12.6	6.0	6.6	2.46	2.15	.31	.15	.16
.....	....	....	....	....	.61	....	....	....	....
.....	....	....	....	....	.20	....	....	....	....
369	92.2	7.8	4.6	3.2	1.32	1.22	.10	.06	.04
723	86.8	13.2	7.3	5.9	1.13	.98	.15	.08	.07
.....	....	....	....	....	100.00	....	....	....	....
.....	....	....	....	....	100.00	....	....	....	....
16,000	63.8	36.2	11.9	24.3	100.00	63.79	36.21	11.85	24.36
35,899	61.6	38.3	13.9	24.5	100.00	61.55	38.45	13.98	24.47
.....	....	....	....	....	45.62	....	....	....	....
.....	....	....	....	....	62.91	....	....	....	....
30,173	30.4	69.6	20.6	49.0	36.89	11.23	25.66	7.59	18.07
35,565	30.4	69.6	24.1	45.5	37.23	11.11	26.12	9.05	17.07
.....	....	....	....	....	54.38	....	....	....	....
.....	....	....	....	....	37.09	....	....	....	....
5,827	83.3	16.7	6.8	9.9	63.11	52.56	10.55	4.26	6.29
0,334	80.3	19.7	7.9	11.8	62.77	50.44	12.33	4.93	7.40

rise from their ranks to higher positions. Of that number 317,000 had risen to the level of farm owners, and the balance to that of farm tenants.

In 1850, according to the census of that year, there were in the United States 1,500,000 persons owning any form of real estate. That was one family out of every 2.77, counting slave and free in the nation. In 1890 the real estate owners among the farmers were one in every 1.61 families in their ranks. Those owners among the farmers were relatively 73 per cent more numerous than real estate owners were among all classes forty years before. Where in the annals of time can there be found such a relative and actual increase in the number of people owning land in a nation subject only to the right of eminent domain? When has the land hunger of the race been so fully fed as it has been during these years in the United States? American farm tenancy has been a factor accompanying those here passed in review, and aided them in feeding the land hunger of the lowly as just described. It must, therefore, in the opinion of the writer, be considered an element of industrial progress and not of decadence.

TABLE D.

AN EXHIBIT, FOR THE UNITED STATES AND THE NORTH AND SOUTH CENTRAL GROUPS OF STATES, OF THE NUMBER OF PERSONS OWNING AND HIRING THEIR FARMS, BY AGE PERIODS, TOGETHER WITH THE PERCENTAGE WHICH THE OWNERS AND RENTERS OF EACH AGE ARE OF THE WHOLE OF THAT AGE.

Geographical Division and Age Period.	Number of Persons.			Percentage.	
	Aggregate.	Owners.	Tenants.	Owners.	Tenants.
The United States	4,767,179	3,142,746	1,624,433	65.92	34.08
Under 25 years	218,531	71,140	147,391	32.55	67.45
25 to 29 "	479,120	207,863	271,257	43.38	56.62
30 to 34 "	603,500	331,607	271,893	54.95	45.05
35 to 39 "	623,786	377,598	246,188	60.53	39.47
40 to 44 "	558,270	378,957	179,313	67.88	32.12
45 to 49 "	542,493	381,148	161,345	70.26	29.74
50 to 54 "	492,299	367,461	124,838	74.64	25.36
55 to 59 "	400,624	319,077	81,547	79.65	20.35
Over 60 "	848,556	707,895	140,661	83.42	16.58
North Central States	1,978,659	1,454,542	524,117	73.51	26.49
Under 25 years	69,308	26,696	42,612	38.52	61.48
25 to 29 "	200,308	97,698	102,610	48.77	51.23
30 to 34 "	267,773	161,889	105,884	60.46	39.54
35 to 39 "	254,214	174,554	79,660	68.66	31.34
40 to 44 "	235,164	177,865	57,299	75.63	24.37
45 to 49 "	222,506	178,772	43,734	80.34	19.66
50 to 54 "	211,261	176,027	35,234	83.32	16.68
55 to 60 "	182,082	158,125	23,957	86.84	13.16
Over 60 "	336,043	302,916	33,127	90.14	9.86
South Central States	1,185,932	613,504	572,428	51.73	48.27
Under 25 years	87,042	22,565	64,477	25.92	74.08
25 to 29 "	143,701	50,312	93,389	35.01	64.99
30 to 34 "	165,956	76,609	89,347	46.16	53.84
35 to 39 "	170,918	85,654	85,264	50.11	49.89
40 to 44 "	136,939	77,747	59,192	56.77	43.23
45 to 49 "	134,730	74,956	59,774	55.63	44.37
50 to 54 "	108,965	64,972	43,993	59.63	40.37
55 to 60 "	79,221	50,550	28,671	63.81	36.19
Over 60 "	158,460	110,139	48,321	69.51	30.49

TABLE E.

AN EXHIBIT, FOR THE UNITED STATES AND THE NORTH AND SOUTH CENTRAL GROUPS OF STATES, OF THE NUMBER OF FARMS, THE ACREAGE OF THE SAME, THE AVERAGE NUMBER OF ACRES TO EACH FARM, AND THE AVERAGE NUMBER OF ACRES OF IMPROVED LAND TO EACH FARM WORKER FOR SEVERAL DECENNIAL PERIODS.

	Years.	Number of Farms.	Acres of Farm Land.			Average Acres to each Farm.	Average Acres Improved Land to each Farm.	Acres Improved Land to each Farm Worker.
			All Land.	Improved Land.	Unimproved Land.			
United States.	1850	1,449,073	293,560,614	113,032,614	180,528,000	203	79	..
	1860	2,044,077	407,212,538	163,110,720	244,101,818	199	80	30
	1870	2,659,985	407,735,041	188,921,099	218,813,942	153	71	32
	1880	4,008,907	536,081,835	284,771,042	251,310,793	134	71	37
	1890	4,564,641	623,218,619	357,616,755	265,601,864	137	78	42
North Central States.	1850	437,597	62,686,490	26,680,332	36,006,158	143	61	..
	1860	772,165	107,899,590	52,308,699	55,590,891	140	68	39
	1870	1,125,078	139,215,269	78,409,509	60,805,760	124	70	39
	1880	1,697,968	206,982,157	136,842,319	70,139,838	122	81	50
	1890	1,923,822	256,586,994	184,292,126	72,294,868	133	97	60
South Central States.	1850	266,814	77,645,466	22,038,946	55,606,520	291	83	..
	1860	370,373	118,992,965	33,232,226	85,760,739	321	89	22
	1870	510,998	99,343,247	31,088,775	68,254,472	194	68	21
	1880	886,648	133,500,223	49,806,771	83,693,452	151	56	24
	1890	1,086,772	156,448,294	66,288,824	90,153,470	144	61	30

NOTE.—The discrepancies between the number of farms as given in Tables A, B, C, and E appear in the Census Reports for 1870 in the volume for Agriculture, pages 220 and 222, and that without explanation.

TABLE F.

AN EXHIBIT, FOR THE UNITED STATES AND FOR THE NORTH AND SOUTH CENTRAL GROUPS OF STATES, OF THE PERSONS TEN YEARS OLD AND UPWARD REPORTED BY THE DECENNIAL CENSUS AS BEING ENGAGED IN ALL AND IN CERTAIN SPECIAL INDUSTRIES AND CALLINGS.

	Year.	Free Males in all Occupations.	Free Males in Agriculture.	Males and Females, Free and Slave, in Agriculture.	Free Male Farm Laborers.	Male and Female, Free and Slaves, Farm Laborers.	Other Free Male Laborers.
United States.	1850*	5,371,876	2,400,583	.....	.....	.....	993,620
	1860†	8,173,752	3,330,612	5,374,118	795,679	2,839,163	969,301
	1870	10,669,635	5,525,503	5,922,471	2,512,664	2,885,996	1,010,345
	1880	14,744,942	7,075,983	7,670,493	2,788,976	3,223,876	1,796,575
	1890	18,820,950	7,821,813	8,466,924	2,556,930	3,004,015	1,858,504
North Central States.	1850*	1,361,790	780,388	.....	.....	.....	207,665
	1860†	2,433,876	1,288,811	1,350,115	302,570	363,874	275,260
	1870	3,553,155	2,029,047	2,035,343	728,837	731,339	324,671
	1880	5,088,033	2,701,408	2,716,810	840,967	845,100	593,890
	1890	6,661,082	3,002,044	3,080,688	772,454	778,015	646,286
South Central States.	1850*	695,673	425,795	.....	.....	.....	86,864
	1860†	1,002,262	462,020	1,503,613	130,820	1,172,413	101,767
	1870	1,990,801	1,293,793	1,496,457	693,662	887,678	102,473
	1880	2,492,259	1,807,531	2,116,570	904,358	1,224,254	230,298
	1890	2,973,003	1,963,968	2,206,876	716,058	956,531	204,408

* Includes only males over 15 years of age. † Includes both males and females.

TABLE G.

AN EXHIBIT, FOR THE UNITED STATES AND FOR THE NORTH AND SOUTH CENTRAL GROUPS OF STATES AT VARIOUS DECENNIAL PERIODS, OF THE ESTIMATED NUMBER OF FAMILIES WHOSE HEADS WERE ENGAGED IN AGRICULTURE EITHER AS A FARM OWNER, TENANT, WAGE EARNER, OR SLAVE. (*Estimates by L. G. Powers.*)

Year.....	1850.	1860.	1870.	1880.	1890.
Total Farm Families..	2,458,000	3,358,750	4,082,700	4,935,000	5,545,500
Farm-Owning Families.....	1,325,000	1,850,000	2,220,000	3,068,000	3,392,746
Families of Tenants, Laborers, and Slaves.	1,133,000	1,508,750	1,862,000	1,867,000	2,152,754
Families of Slaves.....	461,500	595,000	.....	.....	.....
Families of Tenants and Laborers.....	672,500	913,750	1,862,000	1,867,000	2,152,754
Families of Tenants.....	.....	.....	.....	1,325,000	1,624,434
Families of Laborers.....	.....	.....	.....	542,000	692,819

VITAL STATISTICS AT THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The twenty-fifth annual meeting of this Association was held at Philadelphia on October 26–29, and important action was suggested in reference to the adoption of uniform methods of presenting vital statistics by the registrars of the three countries, the United States, Canada, and Mexico, represented by the Association. There has been great loss of time and embarrassment on the part of public health workers and students of sanitation owing to the great diversity among existing classifications of causes of death in this country. The committee on the Nomenclature of Diseases and Forms of Statistics recommended the adoption of the Bertillon system, which was reported to the International Statistical Institute at Chicago in 1893, not on the ground of its ideal perfection, but because, with full recognition of its deficiencies, it would afford an immediate basis of union, and would lead to the establishment of a practical organization for the revision and improvement of the classification adopted. In fact, the resolutions provided for the proposal of a plan whereby the registrars of the three countries may ally themselves with the registrars of France and of all countries adopting the system, thus constituting a union which would promote uniformity around the globe in these important statistics. The Bertillon system is already practically in use in Canada (Province of Quebec), Mexico, and in some important parts of South America, and with its adoption and recognition as the American Continental system the world would have only one other system at all comparable in prevalence, namely, that of the Royal College of Physicians, used in the English Registrar-General's reports and in those of most British colonies. It would be comparatively easy for students of statistics to carry these two systems in mind, and many of their differences would probably be reconciled by future agreement.

Other resolutions submitted were in regard to the advisability of the establishment of the coming United States Census on a permanent basis, with especial reference to the requirements of vital statistics for the use of the public health service of our States; and for obtaining co-operation of registrars in the adoption of uniform classi-

fication of causes of death, without specification of the particular form to be selected. The latter was for the special purpose of organizing the unusually large number of registrars present for definite work. Following are the report and resolutions referred to: —

REPORT OF THE COMMITTEE ON THE NOMENCLATURE OF DISEASES AND FORMS OF STATISTICS.

Mr. President and Members of the American Public Health Association: — Your committee desires first of all to express its sincere regret that the multiplicity of other duties has made compulsory the resignation of its former able Chairman, Dr. Samuel W. Abbott, of Massachusetts, and to hope that his experienced counsel will still be available, so far as his other engagements may permit, in the service of this committee while discharging its duties to the Association. The principal recommendations of this report, it may be said at the outset, especially those relating to the adoption of a standard system of nomenclature, are made possible by the labors of this committee under Dr. Abbott's direction in recent years.

The time has come when it would seem desirable that this Association should pronounce definitely in favor of a standard classification of causes of death for use in the compilation of statistical reports. The Bertillon system, reported to the International Statistical Institute at Chicago in 1893, seems to have better prospects of general adoption at this time by registrars generally in the three countries represented in this Association than any other, and therefore this committee submits as its chief recommendation for action by the Association at the present session that the Bertillon classification be declared the choice of the American Public Health Association.

The classification was printed in full in vol. xx of *Public Health*, so that it is unnecessary to discuss it in detail at this time. It has already been put into practical use by the governments of Mexico and of the Province of Quebec in their reports, and several States of the United States will undoubtedly accept it when indorsed by the Association. Among those ready for the immediate adoption * of a modern nomenclature are Massachusetts, Michigan, Ohio, and Vermont; while all of the States in the New England Registrars' Association will, it is hoped, conform. Besides the long classification

* By immediate adoption is meant adoption as soon as the course of compilation of the registration report will conveniently permit.

printed in the volume of *Public Health* referred to above, there is a shorter and an intermediate classification, each comparable with the longer one, so that the needs of the cities and of monthly reports from States, requiring less statistical detail, are fully provided for. It is especially desirable that the municipal reports adopt the same classification as those used by the State systems, and it is very fortunate that, owing largely to the efforts of Dr. Heckard, Registrar of Vital Statistics of Chicago, we have a large attendance of municipal registrars at this meeting of the Association for the purpose of obtaining greater uniformity in classification.

It is not maintained that the Bertillon system is entirely perfect, nor that it may not be properly subject to revision after a reasonable time. It is believed, however, that its adoption in its present condition will afford a working basis of uniformity, and lead to general improvement along the best lines. Much energy is dissipated, and many valuable suggestions come to naught, from the utter absence of co-ordination. Working together, with a broad basis of agreement, many improvements will be made by the associated registrars, and come into general use, that would not be possible if each State and city continue its development along individual lines.

One of the principal advantages to be derived from the general adoption of the same formal classification of causes of death will be the possibility of reaching a better agreement on the inclusion of the terms employed, as related to the original returns. It is obvious that in even the most extended classification in ordinary use there is considerable condensation, or "consolidation," as the term is technically employed, from the statements made in the certificates of death. This is well known to all who have been engaged in practical registration work, but is less obvious to physicians and others accustomed to accept implicitly the statistics as finally printed in the reports. Sometimes considerable discrepancies may arise from varying methods of compilation, and the necessity of a uniform code of rules for compilation can only be met by associated action.

Among the practical questions to be settled in connection with the adoption of a standard classification is the treatment of still-births. They are not included in the Bertillon classification as used in France, nor is it generally customary to state them among causes of death in the English classification. Nevertheless, both Quebec and Mexico,

in their adoption of the Bertillon system, have so far changed it as to include still-births in the regular list of causes of death, thus rendering a correction necessary before comparison with the standard form of the classification. It is recommended that still-births be separately stated from other deaths, and that, in case it is considered necessary to include them in the classification, they be stated in connection with total deaths, so that errors from inclusion or non-inclusion of the same can be avoided in comparing reports of different countries. Premature births, living an appreciable time after birth, are not still-births, and are contained in No. 138 of the list "Congenital debility, jaundice, and sclerema." Here also may be placed deaths of infants occurring a few days (less than three) after birth, without assigned cause of death, whose inclusion under a separate caption was proposed at the last meeting of the Association. It will entirely defeat the object of the adoption of a uniform classification if each registration office introduces its peculiar modifications of the orginal classification.

Probably the most efficient method of carrying out the purpose of this Association, should it authorize an effort at this time to secure practical uniformity in the classification of causes of death, is the preparation of a circular containing the three alternative systems of classification presented by Dr. Bertillon to the Statistical Institute, with the recommendations of this committee and of this Association, and the endorsements of as many State and municipal registrars as may be able immediately to promise the adoption of the system in their work. This circular should be distributed among the registrars of the three countries. A set of working rules to secure uniformity in the practical work of compilation should accompany the same. It would be very gratifying if this proposed action should lead to a fuller representation of the official registrars at the annual meetings of this Association, with, perhaps, a formal organization for the discussion of questions of vital statistics and the settlement of practical details of registration. They might well meet as a section of the general body.

Leaving the matter of classification and nomenclature of causes of death, this committee urges that steps be taken to secure the adoption of efficient systems of registration of vital statistics in those States that do not possess them at present, and especially in those populous

and wealthy States that are well able to maintain efficient systems at present, but do not do so. Among these States is Pennsylvania, and we sincerely trust that it may not be accounted discourtesy toward our courteous host if we mention and emphasize this fact. It is not due to the lack of interest nor want of well-directed efforts by Dr. Lee and his fellow-workers upon the Pennsylvania State Board of Health, who well appreciate how useful an efficient modern system of mortality statistics would be in their work of restricting disease. Pennsylvania should not lag behind New York and other progressive States in this respect, and if the earnest recommendation of this association of sanitary workers, assembled within her borders from the farthest bounds of the three nations for the promotion of the public health, will be of any avail with her legislative body in causing it to take speedy action for the establishment of a satisfactory modern system of registration of vital statistics, such advice should be given freely and with unsparing reference to the condition of present neglect.

There are many States wherein efficient registration of deaths will be impossible for many years to come, on account of the great sparseness of population. The sanitary authorities in such States should not be deprived of the benefit of reliable vital statistics, so far as the general government can reasonably undertake to supply the want. At every United States Census since 1850 vital statistics have been collected for such States in this country, but the results, under the discredited method of enumeration, have been imperfect and even misleading in many cases. It is possible to obtain accurate vital statistics of representative areas in all of the non-registration States of this country, which, while not wholly exhaustive, will be invaluable for many important sanitary and sociological uses. The collection of useful vital statistics by the United States Census necessarily implies a permanent organization, such data requiring continuous collection from year to year. This committee earnestly recommends that the Association exert its influence for the passage of a law by the approaching session of Congress to provide for a permanent census organization, and as an especially important feature of such a law, having a direct bearing upon successful health work, to provide for the continuous collection of vital statistics in representative areas of non-registration States during intercensal years.

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in their adoption of the Bertillon system, have so far changed it as to include still-births in the regular list of causes of death, thus rendering a correction necessary before comparison with the standard form of the classification. It is recommended that still-births be separately stated from other deaths, and that, in case it is considered necessary to include them in the classification, they be stated in connection with total deaths, so that errors from inclusion or non-inclusion of the same can be avoided in comparing reports of different countries. Premature births, living an appreciable time after birth, are not still-births, and are contained in No. 138 of the list "Congenital debility, jaundice, and sclerema." Here also may be placed deaths of infants occurring a few days (less than three) after birth, without assigned cause of death, whose inclusion under a separate caption was proposed at the last meeting of the Association. It will entirely defeat the object of the adoption of a uniform classification if each registration office introduces its peculiar modifications of the orginal classification.

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Under the head of forms of statistics it may be said that the adoption of a standard classification of causes of death, as recommended in the preceding part of this report, will pave the way for many reforms of value in our methods of presenting vital data. It is especially urged that greater attention be paid to establishing a suitable basis of population in the statement of death rates from the common infectious diseases, such as diphtheria, scarlet fever, and others, whose chief incidence is upon a special age class of the population. Rates, as a rule, should be based upon susceptible population. Similar precautions are necessary in the statement of death rates from all causes, a difficulty which the system of mortality indices, devised by Körösi and adopted by the International Statistical Institute, has been employed to obviate. It is not expedient to enter into the discussion of these subjects in the present report, whose chief object has been to suggest measures whereby the general condition of the collection of vital statistics could be improved, and data of fundamental importance be rendered comparable. Greater exactness and refinement of methods will properly come later on.

Respectfully submitted.

CRESSY L. WILBUR, *Michigan.*
JESUS E. MONJARAS, *San Luis Potosi, Mexico.*
ELZEAR PELLETIER, *Province of Quebec.*
A. G. YOUNG, *Maine.*
RICHARD H. LEWIS, *North Carolina.*

REVIEWS AND MISCELLANY.

THE INTERNATIONAL STATISTICAL INSTITUTE.

The following account of the session of the International Statistical Institute is reprinted from the October Number of the *Board of Trade Journal* (London): —

The biennial session of the International Statistical Institute, which has recently been held at St. Petersburg, is the sixth meeting that has taken place since the foundation of the Institute in its present form in 1885. Previous meetings have been held at Rome, Paris, Vienna, Chicago, and Berne. St. Petersburg had already been proposed as a place of meeting in 1891; and in 1895 a renewed invitation was received from the Russian government through M. Troinitsky, Director of the Central Committee for Statistics at St. Petersburg, to hold the next session there in 1897. A special reason for selecting St. Petersburg for the present meeting lay in the fact that the census of the Russian Empire, the largest that has as yet been taken by bulletin as compared with list censuses, was to be taken early in the present year.

No less than eleven nationalities were represented there by forty-one members of the Institute, namely, French 10, Russian 9, German 6, Austrian 5, British 3, Italian 2, United States 2, Danish, Norwegian, Swedish, and Roumanian, 1 each. In addition there were 8 French and 1 Roumanian Government delegates who were not members of the Institute, and there were also 43 invited members, mainly officials and statisticians belonging to the various Russian administrations.

The session was opened on the 18th of August last by H.I.H. the Grand Duke Constantine Constantinovitch, Honorary President, whose father, the Grand Duke Constantine Nicolaievitch, had presided twenty-five years previously at the Statistical Congress at St. Petersburg.

The Grand Duke delivered an address of welcome, in which he described the objects of the Institute, and expressed especially his

regret that Sir Rawson W. Rawson was compelled to be absent on account of ill health.

In the course of his opening speech he reminded his hearers of the opinions held by his father, who was Admiral of the Russian fleet, to the effect that statistics which threw a light upon social phenomena might be compared to the lighthouses which in the darkness of the night illumine the path of the mariner. He referred in flattering terms to Quételet, the author of *Social Physics*, who was the founder of the Statistical Congress in 1853, and who was present at the meeting held in St. Petersburg in 1872, and stated that the work of the Statistical Congress was being continued with advantage and benefit to the social community by the International Institute, which included the highest statistical authorities in Europe and America, and had spared no effort to perfect statistical methods, to carry on the most useful inquiries, to introduce uniformity in trade statistics, and in general to facilitate the establishment and the development of international statistics. He called attention to the great success which had attended the census enumeration of the Russian Empire, an operation which necessitated the services of an army of 150,000 collectors, who, working over an extent of territory amounting to nearly the sixth part of the globe, registered by family bulletin, person by person, and classified by groups, a population of 129,211,000 souls. When the Congress was held at St. Petersburg in 1872 the population of the Russian Empire was estimated at only 90,000,000.

M. Emile Levasseur, Vice-President of the Institute, in the absence of Sir Rawson W. Rawson, thanked the Grand Duke, in the name of the Institute, for his welcome to St. Petersburg, and referred to the absence of the President through ill-health, and to the death of the following members of the Institute since the previous session, *viz.*, Dr. Mouat, Gen. Francis A. Walker, Mr. John Biddulph Martin, Professor Louis Cossa, M. Jacques Costa, M. Léon Say, and Dr. Engel.

M. Levasseur in addition sketched the rise of the International Statistical Institute, founded on the basis of the International Statistical Congress, which, from 1853 to 1878, had rendered most useful service to statistical science. He touched upon the question of the composition of the Institute, and called attention to the fact that, although it was an unofficial and perfectly independent body, this did not militate against the cordiality of the relations existing between it and the various public administrations, for it rendered the

most valuable assistance to the latter, an assistance which is not only highly appreciated by them, but which can be more effectively given by the Institute than by the old system of International Congress.

Addresses followed by the representatives of the Russian Government, *viz.*, the Minister of Agriculture and Domains, the President of the Committee of Organization, M. Troinitsky, the Vice-President of the Geographical Society, and the delegate from the University of St. Petersburg.

At the close of the sitting a telegram of regret for his absence was forwarded to Sir Rawson W. Rawson, and the following sections were organized, dealing with various subjects as under: —

1st Section — Methodology, Population, Law, and Historical Statistics.

2d Section — Agriculture and Landed Property.

3d Section — Industry, Trade, Colonies, Precious Metals.

4th Section — Finance, Credit, Savings Banks, etc.

Mr. A. E. Bateman, C.M.G., acted as Treasurer, and Signor Bodio as General Secretary.

Among the more notable papers read at the session were: "On the General Census of the Russian Empire taken on 28th January, 1897," by M. Troinitsky; papers by MM. Neymarck, Scharling, Hendricks, and Schmoller; "Report of the Committee on Personal Property, with an examination into the best statistical methods to be employed for the valuation of the capital and revenue of national and international property"; "Report of the Committee on Commercial Statistics," by Mr. A. E. Bateman; "On the Organization of Civil Judicial Statistics," by Mr. McDonell; and "Report of the Committee on Agricultural Statistics and Production and Price of Cereals," by Major Craigie.

A noticeable feature of the session just concluded was the large number of Russian papers read, and this was not only an interesting feature, but a very welcome one. The official returns of the Russian Empire being published in Russian, it has hitherto been difficult, by those who are unacquainted with the language, to obtain a proper appreciation of them; the reading of these papers, therefore, was instrumental in bringing into prominence many valuable statistical data and in affording facilities for drawing some interesting comparisons between the various social phenomena of Russia and those of other countries.

At the meeting on Friday, August 22d, Mr. A. E. Bateman presented the report of the Commercial Statistics Committee, in which it was stated that it was the sixth time that the attention of that committee had been drawn to the methods employed by European countries and the United States on the following points: —

1. The method of registering imports and exports, on the one hand according to countries of first origin and ultimate destination, and on the other hand according to the countries from which and to which they are directly imported and exported.

2. The method of valuation of imports and exports according to declarations of importers and exporters, or according to the values made by official committees, *ad hoc*.

3. The methods of classification of imports and exports by categories (raw materials, manufactures, etc).

The divergency of method on these three points has always been very marked, and showed little prospect of diminishing. Failing agreement, the next best thing was to keep well in view the differences which still exist, so that allowances may be made for them in comparing the trade statistics of various countries. Mr. Bateman therefore proposed to publish in the *Bulletin* the tables which he had drawn up to illustrate the various methods employed in the different countries.

M. Pallain, the Director-General of Customs in France, who was, at the close of the meeting, elected a member, proposed to add to the Standing Committee on Import and Export Statistics the question of unifying the statistics of parcel post imports and exports, a trade which has only sprung up of late years, but bids fair to become of great importance to commerce. Major Craigie, of the Board of Agriculture, presented a communication which was in relation to the methods of drawing up agricultural statistics in three tables, referring respectively to the area under corn crops and to the number of cattle and sheep.

Four subjects of interest, *viz.*, Bimetallism, Protection, Bounties, and Dealings in Futures, though not specially excluded from the list of subjects to be approached, were really left untouched by the discussions, which, on the whole, were eminently business-like and practical.

The example of M. Juglar, of Paris, and M. Körösi, of Budapest, who, in a previous year, made donations of 1000 francs and 800

francs, respectively, was followed by M. Olanesco, of Roumania, from whom a gift of 1000 francs to the Institute's funds was announced.

At the election of the Bureau for the following two years, owing to some misconception, it was understood that Sir Rawson W. Rawson was very desirous of not being re-elected as president, but at the last moment it became known that he would be willing to place his services at the disposal of the Institute. His re-election was generally approved, as it tided over a difficulty of selection. The three vice-presidents re-elected were MM. Levasseur, Lexis, and Troinitsky. Mr. A. E. Bateman, C.M.G., was elected Treasurer in the place of Mr. John Biddulph Martin, deceased, and Signor Bodio was re-elected General Secretary.

In the last meeting of the biennial session the International Institute usually selects the place of its next meeting, and it was announced that the Norwegian Government had offered, through M. Kiaer, one of the most useful and prominent members of the Institute, and Director of the Statistical Bureau of Norway, to receive the members at Christiania in 1899. This proposition was accepted with acclamation, the members congratulating themselves on the prospect of holding their deliberations in a country the statistics of which may be cited as models of excellence.

AN INQUIRY INTO POVERTY.

The Charity Organization Society of New York has performed a useful service to society in turning over to a special Committee on Statistics the records of 500 cases, representing applicants on their books, assisted in 1890 and subsequent years.

The table dealing with Conjugal Condition corresponds fairly well with what is found in the usual reports of the Charity Organization Society. The figures in regard to Age are not regarded as very instructive. The table on Size of Family is more novel and is here reproduced.

SIZE OF FAMILY.

	Families.	Percentage.
No Children	135	27.0
1 child	97	19.4
2 children	89	17.8
3 "	68	13.6
4 "	48	9.6
5 "	38	7.6
6 "	15	3.0
7 "	5	1.0
8 "	4	.8
9 "	11	.02
Total	500	100.

These statistics are not regarded as altogether accurate, because in many cases children living away from home were not counted. By children is therefore meant those who were living with the family. The average number of children for all the 500 cases is 2.05; and the average number in families having children is 2.81. The important fact to note here is that these numbers are smaller than the averages we find in the whole population. The explanation of this is that the grown children among the poor separate themselves from the family at an early age, the girls going into domestic service and the boys wandering away in search of work. This is brought out further by the following table of children: —

	At Home.	At Work.	In Institutions.	Total.
Absolute numbers . .	808	173	46	1027
Percentages . . .	78.67	16.85	4.48	100

The table dealing with Nationality of applicants corresponds to the general experience of New York City. The greater number of the cases had lived in New York a very considerable length of time, "only 15 per cent, in fact, declared that they had been here less than five years."

The investigation as to the causes of poverty is the one which will interest the public at large the most. It is rightly regarded by the Committee as a difficult inquiry. The subject is approached from three points: (1) The alleged cause of distress; (2) The real causes as gathered from the whole record of the case; (3) The character of the case.

ALLEGED CAUSE OF DISTRESS.

	Principal.	Loss of Work.	Sickness.	Drink.	Insufficient Earnings.	Other Causes.
Loss of employment	313	....	69	1	1	3
Sickness or accident	226	36	....	1	12	7
Intemperance	25	10	4	....	2	1
Insufficient earnings	52	....	7	1	....	....
Physical defect or old age	45	2	5	1	1	1
Death of wage-earner	40	11	14	....	4	1
Desertion	40	3	9	....	4	2
Other causes and uncertain	103	2	3	....	....	....
Total	844	64	111	4	24	16

"In this table we consider not the total number of cases, but the total number of applications. This total is a little different from that given on page 1, but for purposes of analysis this is of little consequence. The cause most frequently alleged is loss of employment, 37.1 per cent; next to that is sickness, 26.7 per cent. Of less consequence are insufficient earnings, physical defect or old age, death of wage-earner, and desertion."

The next table deals with an analysis of the real causes according to the judgment of the tabulator.

THE REAL CAUSE OF DISTRESS.

	First Applications.		Total Applications.	
	Number.	Per Cent.	Number.	Per Cent.
Lack of employment	115	23.0	184	22.1
Sickness or accident	102	20.4	164	19.7
Physical defects or old age	27	5.4	42	5.0
Death of wage-earner	18	3.6	30	3.6
Desertion	15	3.0	24	2.9
Intemperance	87	17.4	166	19.9
Shiftlessness	50	10.0	101	12.2
No need	86	17.2	121	14.6
Total	500	100.0	832	100.0

"In this table it will be seen that emphasis is laid on misconduct rather than on misfortune. The difference between a person's judgment of the cause of his misfortune and another person's is shown by contrasting the following figures: —

	Alleged Cause.	Real Cause.	Alleged Cause.	Real Cause.
Lack of employment	313	184	35.9	22.1
Sickness or accident	226	164	26.7	19.7
Intemperance	25	166	....	19.9
Shiftlessness	....	101	....	12.2
No real need	....	121	....	14.6

"The difference between the two sets of returns is obvious. Where lack of employment and sickness have been alleged as accounting for

539 applications, or 62.6 per cent of the total, they are believed by the tabulator to really account for only 348 applications, or 41.8 per cent. On the other hand, intemperance comes in as the real cause in 19.9 per cent; shiftlessness in 12.2 per cent of the applications; and in 14.6 per cent of the applications it was judged that there was no real need. It is very probable that these judgments are severe, but the result shows how frequently, at least, the personal character is a contributory cause of poverty."

The table relating to the character of the applicants shows that in nearly one-half of the cases the character of the men and women was said to be good. "This corresponds rather closely to the 53 per cent of the applications in the table where the real cause of distress is stated to be misfortune. It is curious to note that, while in Table 8 intemperance is credited with 19.9 per cent of the cases as the real cause of distress, in Table 9 it is put down as 17 per cent in regard to the character of man and woman. Shiftlessness figures as 12.2 per cent in one table and 14 per cent in the second. Considering that these tables were made independently of each other, and that the classification is on a different basis, the second table may be said to be confirmatory of the first and an evidence of the general correctness of the analysis." Tables are also given showing the treatment of the cases.

VITAL STATISTICS.

Medizinal-statistiche Mittheilungen aus dem kaiserlichen Gesundheitsamte. Berlin, 1897.

In this article are compared and discussed primarily statistics of deaths and their principal causes at different age periods, (1) of Berlin, Paris, Vienna, and London, for the years 1891–93, and (2) of Prussia, Italy, and groups of the principal cities of France, for the years 1890–93. The statistics of births, still-births, and illegitimate births, and of the excess of births over deaths in these cities, groups of cities and states, are also given. But deaths and births according to sex are not considered.

The death rates in all but one of the age periods, after the first year of life, were less in Berlin and Prussia than in the other cities

or states with which they were respectively compared. The death rate of infants, however, under one year of age was greatest in Prussia and greater in Italy than in the cities of France. Deaths from tuberculosis, pneumonia, and other diseases of the respiratory organs, and certain contagious and infectious diseases, especially those peculiar to children, were less frequent in Berlin and London and most frequent in Paris and Vienna. At all the age periods for which the facts were given, the proportion of deaths from these and other malignant diseases was less in Prussia than in the cities of France, and in general less than in Italy.

The increase of population by excess of births over deaths was relatively greatest in Berlin, and by far least in Paris, and greater in Prussia than in Italy. In the 235 French cities having 10,000 inhabitants or more the deaths exceed the births, exclusive of still-births, by 10,641.

H. J. GERLING.

In 1896 a Swedish statistician, Hr. Gustav Sundbärg, argued before the Swedish Economic Congress that the crude death rate of a country, class, or period is the best single test of its civilization. In an article translated and published in a recent number of the *Journal of the Royal Statistical Society* * Hr. Rubin, Director of the Danish Bureau of Statistics, criticises this position and seeks to show that to measure civilization the birth rate must be considered as well as the death rate. He admits that the latter is the more important criterion because the forces swelling the birth rate are instinctive, while those decreasing the death rate are rational and civilized, but thinks that the reproductive forces which find expression in the birth rate cannot be entirely omitted. To express this paramount importance of the death rate he introduces it into his formula in the form of its square, and claims that civilization may best be measured by the ratio of the square of the death rate to the birth rate $\frac{d^2}{b}$. The smaller this number, the higher the civilization. The application of this measure indicates that the Scandinavian countries and England are most civilized, and Austria-Hungary and Russia the least so, of the sixteen European countries included in his table; that Holland, owing to a rapid fall in her death rate, and a nearly stationary birth rate in the

* "A Measure of Civilization," lx: 148–161. (March, 1897.)

last half century, has rapidly become more civilized, and that England, owing to the sharp fall in her birth rate, and the much more gradual decline in her death rate of recent years, is moving backward. As an effort to measure the civilization of a country, class, or period, by including the entire population and not merely the upper and middle classes, the attempt is worthy of attention.

W. F. W.

Report Relating to the Registration of Births, Marriages, and Deaths in the Province of Ontario for 1896. Toronto, 1897, pp. 36, ccxviii.

This is the first report under the new registration act of 1896, which provides for a much more complete registration. Congratulations are expressed over the advance which has been made. This "seems most creditable to its social advancement, since it was the first of any state or province on the continent to pass such a law."

The division registrars are now entitled to receive from the municipality $20 for each complete registration certified to by the registrar-general. The returns show an increase in number.

Twenty-eighth Annual Report Relating to the Registry and Return of Births, Marriages, and Deaths in Michigan for the Year 1894. Lansing, 1897. Pp. 338, 33.

It is announced that "(1) the data presented are those corresponding to the last State census year, 1894, and hence comparisons of the vital statistics with the population of the State are of special interest and value; the distinction of nationality has also been introduced in conformity with modern census methods to replace the very indefinite classification by general nativity; (2) that an extended table showing the comparative results obtained by the State registration system and the State census enumeration of vital statistics (Table 17, pages 34 to 66) is presented, by the help of which the actual results of registration in each county, township, city, and ward can be examined; (3) that a valuable collection of divorce statistics, showing the great present importance and growing prevalence of divorces in Michigan, was placed at the service of the Department, and appears in Part III of the Report, in connection with the discussion of marriages (pages 167 to 179)."

Forty-third Report Relating to the Registry and Return of Births, Marriages and Deaths, and of Divorce in Rhode Island for 1895. Prepared by Gardner P. Swarts, M.D., Providence, R. I. 1897. Pp. vi, 291.

The editor announces that new data have been obtained and incorporated in this report. The number of deaths are given by separate years under the age of five; the nativity of the deceased is now presented. The nosological arrangement of diseases has been changed and improved. An extended explanation of the reclassification of these diseases is found in Appendix A.

Sixth Biennial Report of the North Carolina Board of Health, 1895–96. Winston, 1897. Pp. 212.

Under the vital statistics it is reported that the total death rate for the whites was 14.1, and for the colored 24.5 per thousand. The largest number of deaths was from tuberculosis, the death rate from that disease alone being 1.67 for the whites and 4.47 for the colored people, the proportion being one white to 2.67 colored. While tuberculosis is much more prevalent among the negroes living in the towns, it is becoming more and more common in the country districts. In a former report it was stated that, contrary to the usually accepted opinion, the negro was less susceptible to malarial diseases than the white man. The reports showed the death rate from that disease to be two and a half to one, as against the negro. This fact has only been emphasized by the more accurate report for 1896, the proportion being 3.33 to one during that year. The negro appears to be much less susceptible to diphtheria than the white man.

In the *Bulletin of the United States Department of Labor*, No. 10, May, 1897, there is an exhaustive statistical article on the conditions of negroes in various cities (pp. 257–361). This is the result of an investigation planned originally to determine the causes of the excessive mortality among negroes, and also to discover whether the mortality was on the increase or decrease. A large number of persons took part in the investigation, and the work has been compiled under the direction of Mr. George C. Bradford, of Boston, one of the Trustees of the Tulane University.

This subject is also dealt with in the Tulane University publications, No. 2, on the *Social and Physical Conditions of Negroes in Cities.* Tulane, 1897, pp. 72, 14.

The unreliability of the vital statistics published by some of the local Boards of Health is well illustrated in the annual report of the Commissioner of Health of St. Paul for 1896. A table is published showing an estimated population for 1896 of 215,582, as compared with an estimated population of 140,292 in 1895. A death rate of 6.67 is thus evolved for 1896 as compared with 9.93 for 1895. We publish the table for the past six years as an interesting illustration of the inaccurate method followed in many cities: —

Years.	Estimated Population.	Total Number Deaths.	Death-Rate.
1891	150,000	1,769	11.79
1892	150,000	1,752	11.68
1893	155,000	1,585	10.22
1894	155,000	1 570	10.13
1895	140,292	1,629	9.93
1896	215,582	1,434	6.67

The Department of State, Michigan, has undertaken the publication of a monthly *Bulletin of Vital Statistics*, the first number appearing under date of September, 1897, The new registry law of that State went into effect August 29, 1897, and is operating, it is said, with success. Over 2,061.616 of the total population of the State is reported for use in the first bulletin, and the death rate based upon the September returns show an increase in accuracy of about fifty per cent as compared with the old system.

In the second number it is stated that the reporting population is 93.41 per cent of the possible reporting population. This indicates that the new work inaugurated in Michigan is progressing. A concrete illustration of the danger of making sweeping conclusions from death rates based upon a short period of time and a relatively small population for a base is seen in the data relating to the city of Marquette, Mich. It appears that in September, Marquette had a heavy mortality. The attention of the Mayor was called to this, and the fol-

lowing explanation is given: It appears that 10 out of the 24 deaths for that month were due to exceptional causes. For example, No. 8 was an infant from an outside village; No. 10 was brought in from Wisconsin; No. 16, a consumptive patient in the county poorhouse, was brought in from another township; No. 18, a hospital patient, was brought in from outside the county; No. 26, a person of advanced years, had lately removed there from another townshlp; Nos. 27 and 28 were accidental deaths.

The *Journal of the Royal Statistical Society* for March, 1897, contains an article of acute statistical analysis on *Local Death Rates in England and Wales, 1881 to 1890*, by Thomas A. Welton. The author attempts to establish as a fact that between the ages 5–45, and particularly between the ages 15–35, such an impression is made upon death rates by migration and by casual events that for the purpose of measuring the strength of the force operating for and against life the facts for those ages should be left out of account, and attention should be concentrated on statistics as to ages 0–5 and 45 upwards. In support of this it is found, for example, that while the mortality rate for the female sex in London during the age 0–5 is 113.5 per cent of the national rate the proportion falls by steps to 78.1 per cent at age 15–25, and rises afterwards to 108.3 per cent at age 45–55. In Birmingham there is a similar progressive fall and rise. In country statistics there is a rise in mortality from after 0–5 to 15–25, followed by a fall after age 25–35, though it rises somewhat after 55. The existence of asylums, hospitals, infirmaries, etc., tends to raise the death rate abnormally in certain cities. At Canterbury out of a total of 3700 deaths 592 were in the Kent and Canterbury Hospital, and at Maidstone 1646 out of 9427 were in a general hospital and lunatic asylum.

PHYSICAL AND MENTAL CONDITION OF SCHOOL CHILDREN IN LONDON.

Report on the scientific study of the mental and physical condition of childhood. With particular reference to children of defective constitution; and with recommendation as to education and training.

London: Published by the Committee, Parker Museum, Margaret Street, W., 1895. Pp. 117.

This report was the work of a committee composed of representatives from the British Medical Association, British Association, Charity Organization Society, Royal Statistical Society, Sanitary Institute, and Foreign Representatives. "The object of the committee in undertaking this investigation was to furnish a reliable statement of existing conditions found among the pupils attending public elementary and other schools, and thus to establish a scientific basis for the study of the requirements of child-life, providing also information for the guidance of the state, educational authorities, and philanthropic bodies." The report embodies the results obtained from two separate examinations, one upon 50,000 children seen in 1888–91, and one upon 50,000 seen in 1892–94.

The children examined were of all social classes and conditions, from the London Board Schools to the Certified Industrial Schools, containing children sent by the magistrate as having some connection with crime, either through their own acts or those of their parents or others. In general, all of the children examined would be classed under non-defective classes in so far as their defects were not prominent enough to cause their separation from normal children into the institution provided for defectives.

Out of the 100,000 children examined in the two surveys, 18,127 presented some defect, serious enough to attract attention upon a cursory examination, or were mentally dull. But two children were sufficiently defective to be certified as idiots, and 51 could be classified as mentally imbecile; thus there were out of the 100,000 but 53 children who could under the law be transferred to special asylums.

The defective conditions were grouped into four main classes. A. *Defects in Development* of the body and its parts,— in size, form, or proportioning of parts; B. *Abnormal Nerve-signs*,— certain abnormal actions, movements, and balances; C. *Low Nutrition*, as indicated by the child being thin, pale, or delicate; D. *Mental Dullness*. The teacher's report as to mental ability was added to the record of each child registered, and those stated to be below the average in ability for school work were registered as "Dull." Many of the children came under more than one of the classes, and cases were found where the child came under all four. Under class A came 9777 children; under class B, 10,355; class C, 3522; class D, 7391.

The records obtained are arranged in thirty carefully prepared tables, which show the analysis, grouping, co-relation, and distribution of condition, of the statistics. With the exception of the table relating to co-relation, the methods used are mainly to obtain different statistical points of view. The table showing co-relation of defects supply evidence as to the real significance of the defects and their causation. The report says, "Inasmuch as it has been shown by the comparison of groups of schools that the co-relation of the main classes of defects varies as to degree, with the character of the environment, it is advisable to determine the percentage of co-relation of defects upon similar groups of cases under different environment. To some extent this has been done by giving the co-relation of the main classes of defects, and individual defects, as seen in children in day schools and in residential schools. The difference in the numerical value of these co-relations under different environment are in some degree a measure of their defect."

The bearing of this inquiry on the education and care of children is, of course, most vital. It is by such censuses that we arrive at answers to important questions, such as, "What proportion of the population of children require special educational provision?" "What are the effects of higher education, technical education, town life, crowded living, deficient light, cottage residence, drainage, and water supply?" Causation and cure can best be studied in the light of similar investigation and thus the defection made normal.

As a result of the investigation two chapters of recommendations and suggestions are offered.

HARRY D. HUNT.

PHYSICAL AND MENTAL CONDITION OF SCHOOL CHILDREN IN SWITZERLAND.

Résultats du dénombrement des enfants faibles d'esprit en âge de fréquenter l'école, y compris ceux qui sont atteints d'infirmités physiques ou qui sont négligés et moralement abandonnés, enquête qui a eu lieu en Suisse au mois de mars, 1897. Part I. Berne, 1897. Pp. xxx, 91.

Educational societies in Switzerland have for some time been interested in securing a thorough investigation in regard to the num-

ber of school children who are in any way deficient and thus unable to keep up with their comrades in their studies. A petition was therefore made in November, 1896, to the Federal Interior Department of Switzerland asking for a statistical investigation. This was readily acceded to by the department, and an inquiry was ordered to be taken in March, 1897. It was determined (1) that this inquiry should be a census of children either mentally defective or afflicted with any physical infirmity which kept them from doing the ordinary work of the primary schools; (2) that only children of school age should be included; (3) that the inquiry should contain only questions which could be easily answered by the educational or institutional authorities, not necessitating medical experts; (4) that certain children should be the object of special subsequent examination by experts under the authority of the cantons; (5) that idiots, crétins, deaf mutes, the blind, epileptics, etc., who, because of these deformities, would be excluded from the primary schools, should be enumerated; (6) that opportunity should be taken to determine the number of children neglected or morally abandoned who had not been placed in an educational institution or in an honest family, and of those who are already the object of public or private charity and care. The *questionnaire* was formulated as follows: —

1. Name and surname of the child.
2. Date of birth of the child, — day, month, year; legitimate, illegitimate.
3. Christian name of the father or of the mother.
4. Occupation of the father or of the mother.
5. Place of residence; place of origin.
6. Is the child with its parents?
7. Or is it placed in a *pension?*
8. Or is it placed in an institution?

A. Does the child attend a primary school, public or private? In this case —

9. Name of the school.
10. Grade of the class.
11. Cannot follow the instruction given in the class.

(*a*) Because, while possessing a normal intelligence, it suffers from a defect of hearing, or of sight, or of some other physical infirmity.

(*b*) Because, while more or less susceptible to mental development, suffers from mental deficiency in a slight or more serious degree.

12. Is it urgent to place the child in a special class or in a special institution?

13. Is there already a special class formed for children intellectually deficient ?

14. Is the child neglected or morally abandoned ?

B. Has the child yet been admitted to school, or does it not attend for other reasons ? In this case —

15. Does he not attend school for one of the reasons indicated under A 11 (*a*, *b*), and for which of these reasons ?

16. Or has he not been admitted to school because he suffers from some other infirmity, such as mental deficiency in a very marked degree, as imbecility, idiocy, cretinism; epilepsy, mutism, or deafness; blindness or partial blindness, or for some other infirmity ?

Careful instructions were given in order to secure accuracy of returns. The result of the inquiry shows that there were 13,155 children of school age who fell within the limits of the inquiry. These are classified as follows : —

1. Mentally defective in a slight degree . .	5,052, or	39 per cent.
2. Defective in a more pronounced degree .	2,615, or	20 "
3. Afflicted with a physical infirmity only .	1,848, or	14 "
4. Idiots, mutes, blind, etc.	2,405, or	18 "
5. Morally abandoned only	1,236, or	9 "
Total	13,155, or	100 "

By a comparison with a school census on December 31, 1895, which enumerated 463,548 children in the primary schools, it is calculated that in every 1000 children of this population there were 16.5 afflicted with mental deficiency in a degree more or less apparent. The census of population in 1888 showed 490,252 children of the ages from 7 to 14 years, which would give a proportion of 15.6 per thousand children in the school age. Ninety-six per cent of the children frequent the primary schools or are placed in educational institutions ; four per cent are instructed by their parents or in families where they are placed.

Of the 7667 children mentally defective in some degree, but regarded as capable of mental development, there are 567 who receive instruction in a special class ; 411 who are placed in special institutions provided for children intellectually deficient ; 104 who are in an orphanage or similar institution and do not need special treatment ; 5585 for whom individual treatment of a special class or in a special institution is desirable ; 534 for whom, although mentally defective, a special treatment is not judged necessary ; 466 for whom the question of disposal is left undecided ; total, 7667.

Careful analyses are made to show the degree of coincidence of physical and mental infirmity. It is seen that there are 929 children mentally deficient who are troubled with defective hearing. There are 276 mentally defective who are troubled with infirmities of sight. The defects of the organs of speech accompany also mental deficiency in a very great number. Here a total of 445 is found. Of these it is recommended that 241 should be placed in a special class, and 138 in a special institution. One hundred and twenty-two of those mentally deficient are found afflicted with nervous troubles, and of these 46 are recommended for a special class, and 57 for a special institution. Two hundred and eighty-one of the others mentally deficient are also troubled with other physical diseases, of whom 146 should be placed in a special class and 76 in a special institution.

A bibliography is given on page xxx of some fifteen titles dealing with this special subject. A second part will be subsequently published.

D. R. D.

FAMILY FOOD BUDGETS.

In the *Fourth Annual Report of the Kingsley House Association* in Pittsburgh, Pa. (1897), an account is given of a food investigation. "Two families, typical of the more prosperous workingmen's families, consented to a daily inspection of their food. The first family consisted of six members, all adults, the mother, of Irish birth, seventy years old, and two daughters and three sons, all unmarried and between the ages of twenty-eight and forty. One daughter is the housekeeper, the other cleans cars for $1.00 a day. One son is on the street-cleaning force, earning $1.50 a day. The other sons, both out of work at the time of the investigation, are said to be skilled workmen, one being a molder of iron, the other a glass-blower. The working son and daughter put all their earnings into the family fund. Their wages amounted to $51.00 during the time in question, as both lost several days' work. For three weeks the family had a boarder who paid $13.00, making the family income $64. The house is comfortable and quite large, renting for $18.00 a month, but they sub-let a portion for $7.00, keeping three rooms and a large attic divided into two rooms. Provisions are bought by

the day and week, except potatoes, which are bought in large quantities in the fall. On Saturdays the markets are visited, and food, even meat, is bought to last several days. Most of the bread, the jelly, jam, and fruit butters are home-made. The investigation lasted thirty-one days." The tabulated statements, which are too detailed to reproduce, are summarized as follows : —

Summary.	Weight as Purchased. Pounds.	Refuse. Pounds.	Waste.	Cost.
Animal food	225.88	12.29	1.55	$19.04
Vegetable food	350.31	25.04	4.96	9.69
Beverages and condiments	25.86	.....	....	3.92
	602.05	37.33	6.51	$32.65

Income for one month	$64.00
Rent for one month	11.00
Food for 31 days	32.65

Cost of food for one person for one day about 15⅝ cents.

"The second family are typical of a less numerous class. The father, born and educated in Switzerland, speaks and reads English, French, and German, and has studied Latin and Greek. He is a fresco painter and decorator, and has been a master for two years. He and his partner do most of the work themselves, only occasionally employing labor. The wife is an Austrian, who came to this country when fourteen. There are three children, a girl aged fifteen, at school, and two boys, one twelve years old, at school, the other ten years old. None seem vigorous, but all are healthy except the boy of twelve, who has a serious scrofulous trouble. The father's income is estimated at $83.00 a month. They pay $13.00 a month for a house with four rooms, an attic and a cellar, with a cellar kitchen used as a laundry. Provisions are bought by day and week, except potatoes, of which a stock is laid in in the fall. Bread, canned fruits, chili sauce, etc., are all home-made.

"A slightly greater variety of meats was used in this family, and more vegetables. The investigation covers thirty days."

	Weight Purchased. Pounds.	Refuse. Pounds.	Waste. Pounds.	Cost.
Animal foods.....	164.73	9.01	3.24	$12.74
Vegetable foods.....	232.24	21.95	1.38	5.25
Beverages and condiments.	13.76	.....	....	1.53
	410.73	30.96	4.62	$19.52

"It should be added that the father lunched frequently at restaurants, paying out in this way about $4.00 during the time of investigation. This sum is included in the figures below following: —

Income for one month	$83.00
Rent for one month	13.00
Food for one month	23.52

Cost of food for one person for one day about 15¼ cents."

Family Budgets: Being the Income and Expenses of Twenty-eight British Households, 1891–94. Compiled for the Economic Club, with an Introduction by Charles Booth, Ernest Aves, and Henry Higgs. London, 1896.

In 1891 the Economic Club decided to collect a number of workmen's "budgets," *i. e.*, weekly accounts, for several weeks or months together, of the total incomings and expenditure of working men's families. A specimen budget was circulated with a schedule of instructions. Thirty-eight budgets were sent in, of which twenty-eight are now published.

The first table gives a description of the family (locality, occupation, number and age of members of each sex), followed by weekly average income, expenditure, and surplus or deficit; period over which the accounts extend,— varying, except in three cases, from four weeks to a year; income of the various members of the family; and expenditure for the whole period, grouped under (*a*) Food and Drink; (*b*) Rent, Rates, and Taxes; (*c*) other items. The next table further classifies the average weekly food and drink expenditure under twenty-two sub-heads. The third table is similar to the preceding, and deals with expenses other than food, twenty-two columns being again needed. The last table supplements the earlier ones by

giving the percentage of various classes of disbursements to the total weekly expenditure, and of the amounts spent on different classes of food to the total spent on food.

MIGRATION OF NEGROES.

The theory that the negroes of the United States tend to migrate south and southwest receives a severe blow from Mr. F. J. Brown in an able and thorough statistical pamphlet, *The Northward Movement of the Colored Population.* (Cushing & Co., Baltimore, 1897.) Its thesis is that, while the negroes are moving from the border States, *i. e.*, Delaware, Maryland, Virginia, West Virginia, Kentucky and Missouri, the main current from these States goes not south, but north. This position is rendered probable by the very low rate of decennial increase of the negroes in the border States compared with a much higher rate in the States north of them, and conclusively proved by inferences drawn from the census tables showing both the State of birth and the State of residence of the negro population in 1880 and 1890. The argument is not to be epitomized without injury, and should be read by all interested in the present aspects of perhaps our most difficult social question. The conclusions reached are probably sound, but might be attacked by denying the comparability of the tables on which the inferences are based. It seems not improbable that a larger proportion of the negro population knew the State of their birth in 1890 than ten years before, and the inquiry may have been pressed by the enumerators with greater care in the later year. The motives to misrepresent the facts may also have altered in the decade. The table giving the facts for 1880 unfortunately lacks a column for birthplace unknown, and yet returns belonging to such a column must have been not infrequent. These reasons, reinforced by the knowledge that many of the foreign-born population returned themselves at the last census as natives make a certain caution wise in accepting some of the author's results. They are highly probable, but I cannot believe that they are "of absolute certainty." [p. 12]. In the United States there are two main tendencies of internal migration, one to new or thinly settled farming land and another to the cities. The last decade was characterized by a relative decline

of the former and an increase of the latter. The movement cityward draws the negroes of the border States north, where the largest number of cities lie. For this reason it would have been useful to show how far the northward migration of the negroes from the border States, which the author has established, has really been a movement to the northern cities.

W. F. W.

THE RUSSIAN CENSUS.

In the *Contemporary Review* for December, 1897 (pages 837 to 845), is an interesting article by E. J. Dillon on *The First Russian Census.* In 1895 the sum of 3,916,682 roubles, or about $2,000,000, was voted for a general census. The task was an enormous one, requiring the highest executive ability. This fell to M. Troïnitsky. The population is extremely heterogeneous, differing in religion and language. A portion of the country is also inaccessible, for there are villages, as in the Caucasus, which are reported to be accessible only in the heat of summer, while others, in Northern Siberia, can only be reached in the depth of winter. In the government of Moscow there are regions larger than Yorkshire in England in which not a single carriage road is to be found. Over one hundred million leaflets were distributed, these papers weighing 1060 tons. The census was taken on January 28th (O. S.) of this year.

The population of the Russian Empire and the Grand Duchy of Finland numbers 129,211,114 souls, of whom —

94,188,750	inhabit the	50	Governments of	European Russia.
9,442,590	" "	10	"	"	Poland.
9,723,553	" "	11	"	"	Poland Caucasus.
5,731,732	" "	9	"	"	Siberia.
3,415,174	" "	5	"	"	The Steppe Regions.
4,175,101	"	the Provinces of Transcaspia and of Turkestan.			
6,413	"	Kiva and Boukhara.			
2,527,801	"	Finland.			
129,211,114					

UNITED STATES DEPARTMENT OF LABOR.

The United States Department of Labor announces that investigations are now being made upon the following subjects: —

1. An investigation relating to the effect of machinery upon labor and upon the cost of production, not only in labor, but in time and money. The field work of this investigation is closed, and the office is at work upon the tabulation and classification of the results.

2. A report on wages paid in the leading countries of the world. Nearly 1,000,000 entries have already been made.

3. An investigation relating to the economic aspects of the liquor traffic. The Department is now in the midst of the field work in connection with this subject, the following three lines of inquiry having already been taken up: —

(*a*) The Liquor Problem in Relation to Industry. Under this head comes the consideration of the effect of the use of intoxicating liquors by employees in manufacturing establishments, upon railroads, etc., the kinds of work which lead to the use of such liquors, and all such matters.

(*b*) The Revenue Derived from the Liquor Traffic. Under this head the Department is collecting from every source, including the Federal, State, county, and municipal governments, all the information relating to the revenue derived from the liquor traffic.

(*c*) The Liquor Traffic. Under this head the Department is attempting to secure information as to the cost of carrying on the liquor traffic, the number of persons employed therein, the capital invested, etc.

4. An investigation, covering the whole country, relating to the municipal ownership of gas, electric, and water plants, the object being to ascertain the extent of the growth of municipal ownership in these three lines and to compare the cost to the consumer of the products of these plants under municipal and under private management. All the departments and bureaus of labor in the country, including the Federal and State offices, thirty-three in all, voted at the annual convention of the officers representing such departments and bureaus, held in Albany in June last, to take up, uniformly and contemporaneously, the study of this subject. The Department will commence its part of this investigation at an early day. In some States the work is already going on under the direction of State officials.

5. Inquiry into the social, moral, and economic condition of the Italians of Chicago.

6. An investigation relating to the economic progress of the negroes in this country. The results of some preliminary studies on this subject will soon be published. Plans for a more extended inquiry are now being formulated.

GERMAN INCOME TAX STATISTICS.

Die mittleren Klassen der Einkomminsteuer in einigen deutschen Grosstädten in der Jahren 1880–1895. By Dr. Wilhelm Böhmert. In *Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft.* Leipzig, 1896.

Dr. Böhmert has made an examination of the income tax statistics of some of the chief German cities, especially in the great industrial center of Saxony, Dresden, Leipsic, and Chemnitz, in order to find out whether the so-called middle classes are disappearing, according to the theories of Marx and his school. He finds that in the light of the income tax figures it would seem that there has been an increase in the middle class rather than a decrease. There is shown, however, to be a decided decrease in the lower classes, and the conclusion he draws is that the lower classes are climbing up to the classes above.

The results of the investigation are arranged in eleven tables. Unfortunately the same classes of progression in income are not observed for all the cities, but when reduced to a common standard the tables give us the following result: —

TAX PAYERS PAYING FROM 600 TO 800 MARKS INCOME TAX, PER 1000 TAX PAYERS.

	Year 1884.	Year 1892.
Braunschweig,	491	419
Hamburg,	411	283
Dresden,	432	317
Leipzig,	383	268
Chemnitz,	445	354

This decrease in the number of men with small income is noticed with almost no variation from 1882 to 1895. This alone would simply indicate a decrease in relative percentage of the lowest class of tax payers. It is only when we examine the next higher class that we see where the tax payers have gone.

The second class of tax payers include those whose incomes vary from 900 to 1200 marks. For the same years the number of tax payers per thousand in this class was as follows: —

	Year 1884.		Year 1892.
Braunschweig,	240		294
Hamburg,	243		311
Dresden,	250	Income	357
Leipzig,	269	from	394
Chemnitz,	279	800 to 1250	327

The investigation carried out for successive classes up to 20,000 marks showed conclusively that for all incomes above 800 marks the number of tax payers per thousand had increased in the cities under consideration.

H. D. Hunt.

LENGTH OF RESIDENCE OF POPULATION.

Part III, Volume 2, the Census of Massachusetts (1895, pp. 717–810,) is devoted to a most interesting inquiry with regard to length of residence of the population in the several towns of Massachusetts. The tables show the number of persons by sex, and whether native born or foreign born, found in each city or town, who had lived in Massachusetts or the United States for periods under 2 years, 2 years, 3 to 4 years, 5 years, 6 to 9 years, 10 to 29 years, and 30 years and over. Of the total population, 2,500,183, there were 139,613 persons who had lived for six months or less in the city or town wherein they lived May 1st, 1895. Of these 49,942 were foreign born, and 89,671 native born. Of the total population —

120,029	persons	had	resided	in	Massachusetts	2 years.
218,517	"	"	"	"	"	3 to 4 years.
98,614	"	"	"	"	"	5 years.
320,561	"	"	"	"	"	6 to 9 years.
968,753	"	"	"	"	"	10 to 29 years.
602,209	"	"	"	"	"	30 years and over.

There were 13,500 persons of whom the facts could not be ascertained. The total number of persons who had resided in the State less than 10 years was 915,721. Of these, 350,136 were foreign born and 565,584 native born.

The facts for Boston as compared with Fall River are as follows:

In Boston about 40 persons in every 100 of the foreign born have had less than 10 years' residence in the United States, but in Fall

River more than 46 persons in every 100 of the foreign born are of this class. In Boston, nearly 18 persons in every 100 of the foreign born have lived in the United States 30 years or more, while in Fall River only about 10 persons in every 100 have had 30 years' residence in the United States. In Boston, between 21 and 22 persons in every 100 of the total population are of foreign birth who have lived in the United States at least 10 years, and in Fall River there are about 27 such persons in every 100. In Boston, the native born who have had 30 years' residence in Massachusetts number only 15 in every 100 of the total population, while in Fall River there are only about eight such persons in every 100 of the total population. The native born who have had at least 10 years' residence in Massachusetts number about 41 in every 100 of the total population in Boston, but only about 29 in the 100 in Fall River. The native born who have had 30 years' residence or more in Massachusetts numbered 74,901, or 15.07 per cent of the total population and 23.66 per cent of the native born population. There were in the aggregate 205,486 native born persons in this city who have had at least 10 years' residence in Massachusetts, and these constitute 41.35 per cent of the total population, and 64.92 per cent of the native born population. The foreign born who have had 30 years' residence or more in the United States numbered 32,091, or 6.46 per cent of the total population and 17.79 per cent of the foreign born population. If we include the foreign born who have had at least 10 years' residence in the United States, we find the aggregate number to be 106,232, or 21.38 per cent of the total population, and 58.89 per cent of the foreign born population.

TENURE OF OFFICE IN BUSINESS CORPORATIONS.

In the *Engineering News* for November 4, 1897, is an article on permanence of tenure of office among water-works' superintendents, comparing the tenure of private companies and the tenure under municipal management. The study is based on the names of superintendents given in the *Manual of American Water-works* for 1897, with those in the *Manual* of 1890–91 and *The Statistical Tables of American Water-works* for 1887 and 1883, respectively,

taking approximately five, ten, and fifteen-year periods. The total number of names of water-works' superintendents of both classes were 909 for the five, 399 for the ten, and 269 for the fifteen-year period.

"For the whole country and for nearly all of the groups each of the three periods shows a greater permanency of office among the private than among the public works, but the difference is not so great as might have been expected, especially in the last two periods. For the first period 62 per cent of the private and 46 per cent of the the public-works made no change in their superintendents. For the second period, of about ten years, no changes occurred in 39 per cent of the private and 31 per cent of the public-works, while in the last, or 15-year period, the relative percentages were 34 and 23; the differences in these percentages of permanency for the successive periods were only 16, 8, and 11, respectively, in favor of the private companies. In general the Eastern and Southern groups of states make a better showing than the balance of the country for both classes of works, the men themselves, perhaps, having less tendency to change occupation or residence than in the West. In the New England States the private and public-works make practically the same showing, and that a high one, for each of the three periods, while in the Middle group the private are far ahead of the public throughout.

"Disregarding ownership, the percentages of works which retained the same superintendent are 55 for the first, 35 for the second, and 27 for the third period. Many of the changes on each side have been caused by death, a factor which could not be fully ascertained and so has been ignored. In many other cases of change of superintendent some other official has retained a responsible position throughout the period."

STATISTICS OF STREET RAILWAYS.

The October number of the *Street Railway Journal* contains an exhaustive statistical article on distribution of street railway mileage and capitalization. The American mileage in double track mileage of the country in 1897 is estimated at 15,718, an increase of 93.5 per cent over that of 1890. This increase has been largely in smaller cities and in suburban and country districts. The changes in dis-

tribution of mileage, by motive powers, between 1890 and 1897, are as follows: —

	1890.	1897.
Animal,	5,661	947
Electric,	1,262	13,765
Cable,	488	539
Miscellaneous,	711	467
Total,	8,123	15,718

The percentage of increase has been larger in the New England States than in any other portion. The number of passenger cars has grown from 32,505 in 1890 to 51,532 in 1897. The changes in capitalization are as follows: —

	1890.	1897.
Capital Stock,	$211,277,798	$846,131,691
Funded Debt,	151,872,289	633,079,178
Total Capitalization,	363,150,087	1,479,210,869
Capital Stock per mile of track,	26,010	53,800
Funded Debt per mile of track,	18,696	40,300
Total Capitalization per mile of track,	44,706	94,100

It is regarded as impossible to make an accurate determination of earning power of street railways, because of the "disinclination of a large proportion of the medium sized and smaller companies of the country to give out statements of their earnings to the public." "It is merely certain that our street railways today are earning at least $150,000,000 gross, and it is probable that the net earnings applicable to a return on investments as figured by the companies themselves would be between $40,000,000 and $50,000,000." Tables are furnished, also, showing "capital liabilities per capita population, and population per mile of track." It may be inferred that, though the capitalization per mile is not as great as that of steam railways, the net earnings are greater.

INDEX NUMBERS IN CORRECTION OF EXPORT STATISTICS.

In the *Statistical Year Book of Canada* for 1896 (Ottawa, 1897; pp. 477) there is a calculation of the export trade of Canada, based upon the plan suggested by Mr. Stephen Bourne some years ago in the *Journal of the Royal Statistical Society*. By this plan index numbers are used by which it can be readily seen in what respects the results of the exports in several years correspond to or differ from each other, both as regards quantity and price. The year

1883 has been taken as the year of reference. Individual calculations have been made for 63 distinct articles. The number 1000 has been taken to represent the value of the exports of 1883, namely, $87,702,000, and has been divided up into so many numbers as there were specified articles, the values of which made up the sum of $87,702,000. "This 1000 has also been taken as the number for quantity and volume, and as the index number for value of each article, being divided by that of price, becomes the index number of quantity, the total represents the value of last year's transactions as compared with the index of value. For example, in 1883 the exports of coal were 430,081 tons, valued at $1,087,411; in 1896 there were 1,025,060 tons, valued at $3,249,069; the price per ton being $2.52 and $3.17 respectively, or 26 per cent higher in 1896. The value index of 12.3 stands for 1883, but being multiplied by 1.26 we change it into 15.5 to represent the value, $1,359,000, which would have accrued had the price been the same as in 1896. Or, reversing the process, we divide the value index 37.1 for 1896 by 1.26, giving 29.4, to show the value, $2,578,000, which the coal of that year would have realized had it been sold in 1883, and thus get the ratio of quantity to value for this article."

DEFECTS IN EXPORT STATISTICS.

An illustration of the defects of import and export statistics relating to trade between Canada and the United States is given in the *Monetary Times* (Toronto) of November 19. By the British customs the imports of Canadian bacon into the United Kingdom, in the nine months ending September 30, 1897, were 197,719 cwts. as compared with 318,129 cwts. in the similar period the previous year. This would indicate a serious falling off. The *Monetary Times*, however, believes that this diminution did not accurately represent the trade conditions, and that, instead of decreased exports of bacon, there is reason to believe that a considerable increase has taken place. It is believed that the packers of Canada, instead of shipping by Canadian ports, have preferred to use the American ports. The United States is credited with an increase of 700,000 cwts. during the period in which Canada is made to appear to have lost ground. A part of

this gain, it is asserted, is without doubt due to the larger shipments of Canadian packers. It is believed that a penalty should be exacted from consignees who fail to mark the name of the country of origin on the package. In this connection it is noted that American dairymen are accustomed to use Montreal as a port of shipment for cheese and butter, and thus it may be possible that what Canada loses in one way it gains in another.

RELATION OF RECRUITING TO POPULATION.

In France men are universally held to military service at the age of twenty years. The conscripts enrolled in a given year are therefore drawn from the male births of the twentieth year previous. Dr. Léon Vacher, in the September number of the *Journal de la Société de Statistique de la Paris*, compares the number of conscripts annually enrolled for a series of years (1816–1895) with the male births from which the classes are drawn.

On the average, the male births have remained about stationary throughout the period observed, while the number of conscripts has sensibly increased from the year 1833. The explanation of this phenomenon is found in the nationality law of June 26, 1889, which adds 4000 to 5000 naturalized foreigners to the annual military contingent, and in the hygienic improvements, particularly those resulting from the agitation on the subject of infant mortality, which culminated in the Roussel law of December 23, 1874. These health measures have brought about an increase of from twenty to twenty-five thousand male survivors at the age of twenty.

Vacher refers important fluctuations in the yearly conscript enrolment to prominent economic or political events. He concludes that the variations are not the effect of chance, but reflect the social, political, and economic events which produce them.

F. S. Crum.

FALL IN THE RATE OF INTEREST.

In the *Fortieth Annual Report of the Bank Examiner of Maine* (1896, p. x) there is a table showing the experience of the 52 savings banks in the State of Maine in the payment of dividends: —

Rate of Dividends Paid.	Number of Banks.											
	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.
6 per cent paid by	1	...	....	....	....	....	....	....	....	....	....	....
5 1-2 " " " "	....	1	....	....	....	.. .	....	....	....	....	....	....
5 " " " "	6	5	4	5	6	3	4	4	2	1	1	....
4 3-4 " " " "	....	....	1	1	....	....	....	....	....	....	....	....
4 1-2 " " " "	6	4	4	5	6	7	5	4	3	2	2	1
4 3-8 " " " "	....	....	....	....	....	....	....	....	1	....	....	....
4 1-4 " " " "	....	1	....	1	....	....	2	1	3	....	....	....
4 1-8 " " " "	....	....	....	....	....	....	....	....	....	1	....	....
4 1-20 " " " "	....	....	....	....	....	....	....	....	....	1	.. .	....
4 " " " "	41	39	38	42	42	42	38	39	37	33	29	27
3 8-10 " " " "	....	....	....	....	....	....	....	1	....	....	1	....
3 3-4 " " " "	....	...	....	....	....	....	1	1	....	4	2	2
3 1-2 " " " "	....	2	4	1	1	....	2	....	4	5	8	14
3 1-4 " " " "	....	....	....	....	....	....	....	1	....	....	2	3
3 " " " "	....	2	3	....	....	2	1	1	1	2	5	5
2 1-2 " " " "	....	...	...	....	....	....	....	....	....	....	1	....
2 " " " "	....	....	....	....	....	...	....	1	1	2	....	....
Average rate paid....	4.20	4.09	4.02	4.15	4.15	4.07	4.08	4.04	3.98	3.84	3.79	3.72

The earnings of these institutions in 1896 were approximately $2,461,361.67, or $4\frac{1}{10}$ per cent on the average amount of deposits, from which must be deducted all operating expenses and taxes. "The table shows that 1886 saw the last bank that could pay either a $5\frac{1}{2}$ or 6-per-cent dividend; that there has been a steady decline in the number of banks that were paying 5, $4\frac{1}{2}$, and 4 per cent, and of course a corresponding increase in those paying $3\frac{1}{2}$ per cent and less. It is also to be noted that the average rate has declined from 4.20 to 3.72 per cent from 1885 to 1896. Along with this has been an increase in taxes forcing many purchases of government bonds which are non-taxable"

MUNICIPAL ELECTRIC LIGHTING.

Twelfth Annual Report of the Board of Gas and Electric Light Commissioners of the Commonwealth of Massachusetts, June, 1897. Boston, 1897. Pp. 182, clvi.

The following extracts from the report indicate the development of municipal ownership in lighting plants in Massachusetts: —

"Official reports relative to action about a municipal plant for gas or electric lighting have been received from 210 towns and cities. Included in this number are all those in which the population exceeds 1500. Of these municipalities 179 have taken no action during the year 1896.

"The towns of Belmont, Concord, and Rockland, and the city of Holyoke, have considered the subject for the first time.

"During the year the new plant in Chicopee has been put in operation, and Danvers has nearly completed a plant for the supply of commercial lights.

"The towns of Braintree, Danvers, Hingham, Hull, Marblehead, Middleborough, Needham, North Attleborough, Peabody, Reading, Wakefield, and Wellesley, and the city of Chicopee, have now electric light plants in operation. Of these Middleborough and Wakefield only have works for the supply of gas. The towns of Needhan and Wellesley have distributing plants for street lighting only, and purchase their electricity for this purpose from the Natick Gas and Electric Company. The town of Hingham has a distributing plant for both street and commercial use, but buys its electricity from the Weymouth Light and Power Company."

THE AGRICULTURAL POPULATION OF FRANCE.

According to a report made to the Foreign Office of Great Britain by Mr. Austin Lee, commercial attaché to H. M. Embassy at Paris (*Foreign Office, Annual Series, No. 2,007*), the total number of the population of France living by agriculture (farmers, laborers, and their respective families) is estimated at 18,250,000 souls, or about half of the total population of France.

The agricultural classes are divided into two nearly equal groups, the masters being reckoned at 3,460,600, whilst of the laborers there are 3,452,904. Of the nearly 7,000,000 individuals cultivating the land a little more than one half (3,525,000) are owners of a more or less considerable portion of the soil. Thus, of the masters, 2,151,969 own the land they cultivate; while 968,328 are tenants, of whom 500,014 own a part of their farms. The number of *metayers* is calculated at 341,576, of whom 147,728 own plots of land. Out of

1,480,687 agricultural laborers, 727,374 own small plots of land. The 1,954,251 farm servants and 18,000 bailiffs, many of whom, however, as the sons of peasant proprietors, possess no land.

As regards the holdings and their extent, it appears that their total number amounts to 5,672,007. Of these 217 only are of more than 500 hectares (1235) acres; 28,586 range from 100 to 500 hectares (247 to 1235 acres); 56,866 from 50 to 100 hectares (123½ to 247 acres); 783,641 from 10 to 50 hectares (24 to 123½ acres); and 4,802,697 are less than 10 hectares (24 acres) in extent.

STATE AND FEDERAL STATISTICS OF SHEEP.

In an article in the December Number, 1897, of the *Bulletin of the National Association of the Wool Manufacturers* attention is directed to the discrepancy between Federal and State statistics of sheep.

"Accepting, as heretofore, the figures of the Department of Agriculture as to the number of sheep in the country on April 1, 1897, we are again obliged to call attention to the fact that these figures differ materially, in many instances, from those of the State authorities, which are those of the assessors, and almost without exception report a less number of sheep than that stated by the United States Department. A few of these cases are given herewith for illustration":—

		State Assessors.	U. S. Dept. of Agriculture.
Massachusetts	1896	34,091	46,653
"	1897	33,000*	40,672
Ohio	1896	2,293,686	2,633,410
"	1897	2,102,959	2,245,781
Iowa	1896	318,494	547,618
"	1897	464,701	517,281
Kansas	1896	182,236	253,222
"	1897	222,703	217,104
Wyoming	1897	1,391,795	1,533,620
North Dakota	1896	226,701	349,393
Texas	1895	1,589,378	3,487,663
"	1895	2,386,822†	.....
"	1896	2,140,889†	2,911,993

* Estimated. Returns for 1897 not yet compiled.

† Both statements given in official report. Thirty-seven counties not reported.

NOTES.

Statistical Report of the Colony of the Cape of Good Hope for the year 1896. Cape Town, May, 1897. Pp. xv, 359.

A record is kept in this colony of the marriages solemnized on various days of the week. Friday is declared to be an unpropitious day, as out of 7853 marriages only 164 took place on that day. Tuesdays were most frequently selected, 39.04 per cent, Mondays following with a percentage of 33.33.

Report of the Results of a Census of the Colony of New Zealand, taken for the night of the 12th of July, 1896. Wellington, New Zealand, 1897. Pp. 163.

An interesting example of the correctness of the annual estimates made by the registrar-general is disclosed by the census of New Zealand. The census of 1896 gives the population as 703,360. The estimate of the registrar-general for the 31st day of March, twelve days previous, obtained by checking returns of departures received from the customs authorities, was 701,382.

In the *Würtembergisches Jahrbuch für Statistik und Landeskunde für 1896* (Stuttgart, 1897), in addition to the usual statistical details there are special articles on the mortality, length of life and causes of death of physicians of Würtemberg from 1810–1895, and on the statistics of unemployment in Stuttgart.

Mitteilungen des Bernischen statistischen Bureaus. Year 1897, No. 2. Berne, 1897. Pp. 73–193.

This number contains the results statistically presented of the various referendum votes in the Canton of Berne since the introduction of this institution.

Fourth Annual Report of Changes in Wages and Hours of Labor in the United Kingdom for 1896. London, 1897. Pp. lxxxi, 273.

It is reported that in 1896, in comparison with the two preceding years, the increase of wages has largely exceeded the decrease. "The number of individuals whose wages were raised was 382,225, more than twice the number (167,357) whose wages were decreased

during the year. The net effect of all the changes recorded in 1896 would be a rise of $26,592 in weekly wages compared with a fall of $28,211 in 1895, and of $45,091 in 1894."

A public document entitled *Important Serial Documents Published by the Government, and How to Find Them*, prepared by Messrs. Alonzo W. Church and James M. Baker, of the library of the United States Senate (Senate Document, Number 103, 54th Congress, 2nd Session, Washington, 1897, pp. 91), will be of great service to all students who have to use the public documents.

In the United State *Consular Report* for December, 1897, notice is given that beginning with January 1, 1898, the miscellaneous reports of consular and diplomatic officers upon commerce and industries in foreign countries will be issued in the form of *Advance Sheets*, thus making, practically, a yearly issue. The Bureau will bring them together in its regular monthly form for permanent reference.

Synoptical Index of the Reports of the Statistician. United States Department of Agriculture, 1863–1894. By George F. Thompson. Washington, 1897. Pp. 258.

The first statistical report of the United States Department of Agriculture was issued in June, 1863, and since that time one has been issued in either monthly or bi-monthly form. The contents of these reports have not been confined to statistics alone, but have been devoted to articles of a general character. This index, therefore, includes references to much that is not of a statistical character. At the same time it will be invaluable for students desiring reference to exact data in the field of economic production.

The Manual of American Water Works, 1897. Edited by M. N. Baker, Associate Editor of *Engineering News*. Engineering News Publishing Co., New York, 1897. Pp. 611, cxiv.

This is the fourth issue of this manual. It contains descriptions of all water-works completed, under construction or projected in the United States and Canada up to the close of 1896. Data are presented with regard to the history, general character, capacity of the pumps, reservoirs, stand-pipes or filters, the extent of the distribution system, and finances. The conditions of franchises are noted; also the

legal difficulty between private water-works' companies and cities. The figures are for the fiscal year 1895 or 1896. A table of water rates is also included, showing the fixture and meter rates charged in over 1250 cities. The total number of water-works in the United States has increased to 3196. Of these 1690, or more than half, are owned by the municipality which they supply, and 1489 by private companies, leaving 17 of unknown ownership. Of the 50 largest cities in the United States 19 have changed from private to public ownership, and only nine are now dependent upon private companies for their supply.

In the *Engineering News* for December 16, 1897, is an article on *Systems of Accounts on Engineering Works* by A. F. Bridgman, of Boston. He notes the great variety of financial statements of public-works, and presents for illustration the summarized accounts of three great public-works, the Sanitary District of New York, the Metropolitan Sewerage Commission of Massachusetts, and the Metropolitan Water Board of Massachusetts. He concludes by recommendations in regard to a system of accounts.

In the *Twenty-first Year Book of the New York State Reformatory for the year ending December 30, 1896* (Elmira, N. Y., 1897), the results of a new experiment are reported upon in detail. One hundred and forty-one "irresponsive and incorrigible men under the quite unusual array of the operating agencies of the Reformatory régime" were specially assigned to a manual training experiment class. These 141 are distributed into three groups, as follows: (1) Mathematically Defectives, 17; (2) Self-control Defectives, 49; (3) Mattoids, 36. The general recapitulation of results is as follows: —

Improvement is shown by general record	28
Improvement observed and reported by instructor	17
Partial improvement (Mattoids) in school but not in trade	6
Withdrawn for invalidism, incorrigibility, etc.	13
So far irresponsive	38
Too recently assigned to warrant expections of improvement	39
Total assignments,	141

Part I of Volume II of the *Census of Massachusets for 1895*, pp. 1–518, entitled *Population and Social Statistics*, has appeared. This deals with statistics of age.

Part I of the *Twenty-Seventh Annual Report of the Massachusetts Bureau of Statistics of Labor*, pp. 1–104, is a monograph on the social and industrial changes in the county of Barnstable, Mass. This is the Cape region of the State, a county which has declined in population from 34,610 in 1865 to 27,654 in 1895. There has been an interesting immigration of Western Islanders, not large, as compared with immigration in other parts of the State, but compact in its character. As a social study this pamphlet will be of value to the economic sociologist.

Number 3 (July, 1897) of the *Labor Bulletin of Massachusetts* contains a convenient digest of the laws of the various Commonwealths of the United States relating to hours of labor, brought down to 1897. There is also a review of the work of the State Board of Arbitration and Conciliation from 1886 to 1896. The results thus secured are brought into comparison with similar information published by the director of the department of labor of the Republic of France.

The late Hon. E. G. Spaulding, of Buffalo, N. Y., who so vigorously promoted the passage of the legal-tender bills of the civil war period, has recently died, leaving an estate valued at about $3,500,000. It appears that it was his custom to make from time to time an inventory of his property. He went to Buffalo in 1835 with but $500, which he had saved up by teaching school. The several inventories are as follows: —

1835	$ 500	1874	$1,040,803
1853	325,273	1877	1,312,366
1855	352,585	1879	1,408,615
1856	303,579	1881	1,631,334
1857	363,945	1882	1,747,942
1864	367,327	1884	1,794,814
1868	590,573	1889	2,640,625
1870	701,558	1891	2,899,492
1871	782,560	1897	3,500,000
1872	848,332		

In the *Fifth Annual Report of the Associated Charities of St. Paul* for the year ending September 30, 1897, it is noted that one-fourth of the chief causes of need was for lack of work. Less than one per cent of all applicants were members of trades unions.

INSANITY IN ENGLAND.

The following analysis of the report of the Lunacy Commissioners of England and Wales is taken from the *Lancet*, October 2, 1897: —

The total number of persons of unsound mind in England and Wales under the supervision of the Lunacy Commissioners on January 1, 1897, was 99,365. This represents an increase of 2819 for the year 1896. There has been an increase of 2857 pauper patients, 53 private patients, and nine criminal lunatics. The returns for Scotland and Ireland also show that the asylum population is increasing. At first sight it would appear that insanity in its more active phases is making rapid strides among the populace, but the official view does not confirm this, and the authorities of the various countries are strong in the conviction that the increase is more apparent than real, and is mainly due to accumulation. This assertion is decidedly reassuring, but perhaps it is capable of further proof. An argument in favor of the Commissioners' views is furnished this year by the fact that the death rate of the English asylums shows a considerable diminution. The effect of a recorded decrease of 0.96 in the death percentage of 1896, as compared with that of 1895, was to leave alive at the end of 1896, 722 patients who would have been removed by death if the rate of mortality had been the same as that of the previous year. On the other hand, a slight advance of 0.35 in the recovery rate brought about the discharge of 66 more patients than would have been left if the rate of 1895 had prevailed, and this number must be deducted from the 722, leaving 656 cases as the result of the diminished discharge rate. This is an explanation as far as it goes, but it leaves a very large margin to be accounted for. What is the composition of this residue? Is it due to recent, recurrent, or chronic insanity? This is the point to determine, and in this respect the statistical information afforded by the Commissioners is very defective. No statistics are available for estimating the number of persons *with first attacks* in which the onset of insanity took place *within three months of admission.* A table conveying this information is inserted in every asylum report, and it is therefore safe to assume that the sum total for the whole country could easily be ascertained. For the purposes of comparison such a table would prove invaluable, and it is the only method of obtaining anything like reliable information regarding the incidence of freshly occurring insanity; further, it would tend in a great measure to solve the difficult question whether there is or is not an increased liability to insanity amongst the population. In the Red Book of the Asylums Committee of the London County Council the proportion of such cases appears to be 37 per cent of the admissions. It would be interesting to know the ratio for the whole country.

While the number of pauper lunatics shows a marked increase from year to year, the case is otherwise with private patients. In the latter class there has been a continuous decrease, from 2.82 per 10,000 of the whole population in 1891 to 2.68 in the present year. During the same period the ratio of pauper lunatics has increased from 26.78 to 29.07 per 10,000 of population. As to the general proportion of insanity, it appears that in 1859 the proportion of officially known lunatics to the population was 1 to 536. Since then things have materially altered for the worse, for the ratio at the present time is 1 to 313. The statistical tables in this year's report have been supplemented by the inclusion of a table giving the number of patients admitted in each month of the year 1895 suffering from the principal forms of mental disorder, and also showing the daily average of those admissions for each month. It is somewhat singular that the admissions under all heads were most numerous in the month of May, next in April, and thirdly in June. The daily averages of admissions for each of the five months, March to July, exceeded the daily average for the whole year; again, the daily average of admissions of cases of mania was highest in April, *viz.*, 32.3 per cent; and that of cases of melancholia highest in June,—19.3 per cent. The lowest daily average in both cases was in February, *viz.*, cases of mania, 24.3 per cent, and of melancholia 13.3 per cent. This is a valuable and instructive table, which, it is to be hoped, will be continued in future reports; in the form of a chart it would prove still more useful. The conclusion drawn is that insanity requiring early and active treatment away from home developes more frequently in the spring and summer months than in the autumn or winter.

The actual number of recoveries during the year was 7178, an increase of 105 on the previous year. The proportion of recoveries to the total number of admissions comes to 38.53 per cent, as compared with 38.18 per cent in 1895. The total number of deaths was 6806, being 9.05 per cent of the daily average number resident. In respect to the assigned causes of insanity, the Commissioners are of opinion that very great reliance cannot be placed on the returns, but apparently hereditary influence continues to be the most fruitful cause, previous attacks coming next, and intemperance in drink taking the third place. The proportion of old age as a cause continues to advance in the pauper class. The cases of relapse also show a tendency to increase in the same class. It is stated that this may be accounted for by the anxiety to discharge patients "not perfectly cured," owing to the crowded state of so many asylums. The Commissioners, having recognized the fact that there is a tendency to premature discharge, ought to consider the feasability of endeavoring to check it as far as possible, for there can be no doubt that, in addition to frequency of relapse, it is responsible for other evils, *viz.*, an increased production of hereditary insanity, and a larger proportion of insane criminals.

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VOL. I. 1888–1889. NOS. 1–8. Pp. 492.

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